ORDER NO. MOD9501038C1
E1

Service Manual

Microwave Oven

MODEL	APH	CPH
NN-7755A	○	–
NN-7705A	○	–
NN-7555A	○	–
NN-7555C	–	○
NN-7545C	–	○
NN-7515A	○	–
NN-7505A	○	–
NN-7455A	○	–
NN-7405A	○	–

APH···For U.S.A., Puerto Rico and Latin America (120V Area)
CPH···For Canada

Specifications

Power Source :	120 V AC Single Phase 60 Hz
Power Requirement :	1,660 W·····NN-7755A/7705A 1,500 W·····Except NN-7755A/7705A
Output :	1,000 W (IEC705-88)·····NN-7755A/7705A 925 W (IEC705-88)·····Except NN-7755A/7705A
Microwave Frequency :	2,450 MHz
Timer :	99 min. 99 sec. (Digital)
Outside Dimensions :	23-7/16" (W) × 16-5/16" (D) × 14" (H) 595 mm (W) × 415 mm (D) × 356 mm (H)
Oven Cavity Dimensions :	16-5/16" (W) × 15-1/8" (D) × 10-3/16" (H) 415 mm (W) × 385 mm (D) × 259 mm (H)
Weight :	40 lbs (17.9 kg)
Specifications subject to change without notice.	

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J" (D.H.H.S.): U.S.A. models
   or "Radiation Emitting Devices Act" (Health and Welfare Canada): Canadian models
   it is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage".
4. If the unit cannot be repaired on site, advise the customer not to use until unit be repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (MSC)	Matsushita Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201) 348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5 Carolina, Puerto Rico 00985 (809) 750-4300
		IN CANADA (MELCA)	Matsushita Electric of Canada Limited 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905) 624-5010

6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced only with the manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches.
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

(APH/CPH)

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FEATURE CHART

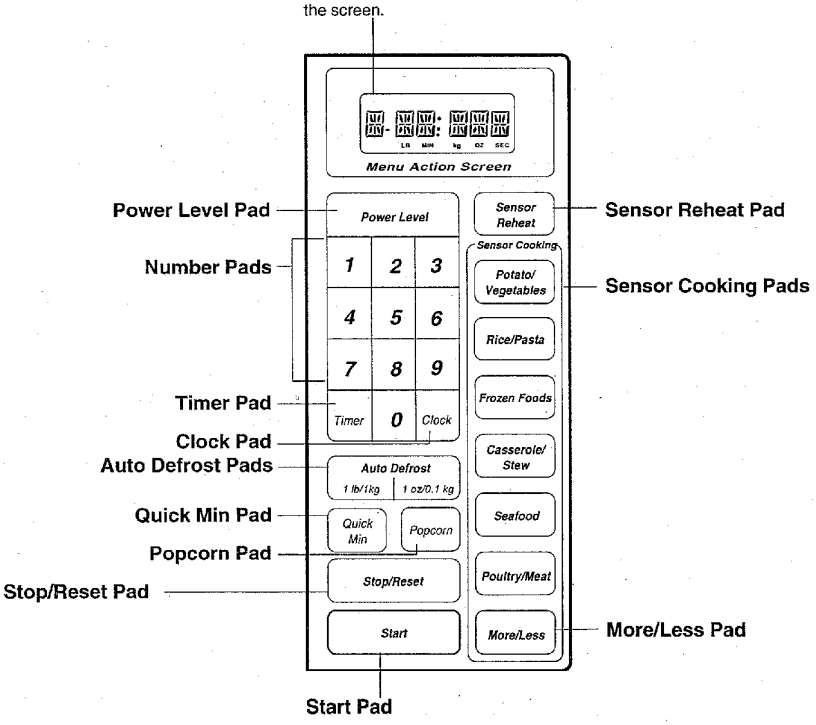
FEATURE \ MODEL	NN-7755A/7705A	NN-7555A/7555C NN-7545C/7515A NN-7505A	NN-7455A/7405A
Two/Three Stage Cooking	○	○	○
Sensor Reheat	○	—	—
Sensor Cooking	○	—	—
Auto Defrost	○	○	○
Auto Reheat	—	○	○
Auto Cooking	—	○ 8 Menu	—
Popcorn	○	○	○
Potato	○ Including Sensor cook	○	—
Frozen Foods	—	—	○
Memory	—	—	○
Quick Min	○	○	—
Child Safety Lock	○	○	○
Operating Guide on the Display	○	○	—
Delay Start	○	○	○
Timer	○	○	○
Digital Clock	○	○	○

CONTROL PANEL

NN-7755A/7705A

Menu Action Screen

During microwave operation, the indication rotates at the left side of the screen.



FEATURE CHART

FEATURE \ MODEL	NN-7755A/7705A	NN-7555A/7555C NN-7545C/7515A NN-7505A	NN-7455A/7405A
Two/Three Stage Cooking	○	○	○
Sensor Reheat	○	—	—
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Auto Defrost	○	○	○
Auto Reheat	—	○	○
Auto Cooking	—	○ 8 Menu	—
Popcorn	○	○	○
Potato	○ Including Sensor cook	○	—
Frozen Foods	—	—	○
Memory	—	—	○
Quick Min	○	○	—
Child Safety Lock	○	○	○
Operating Guide on the Display	○	○	—
Delay Start	○	○	○
Timer	○	○	○
Digital Clock	○	○	○

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NN-7755A/7705A

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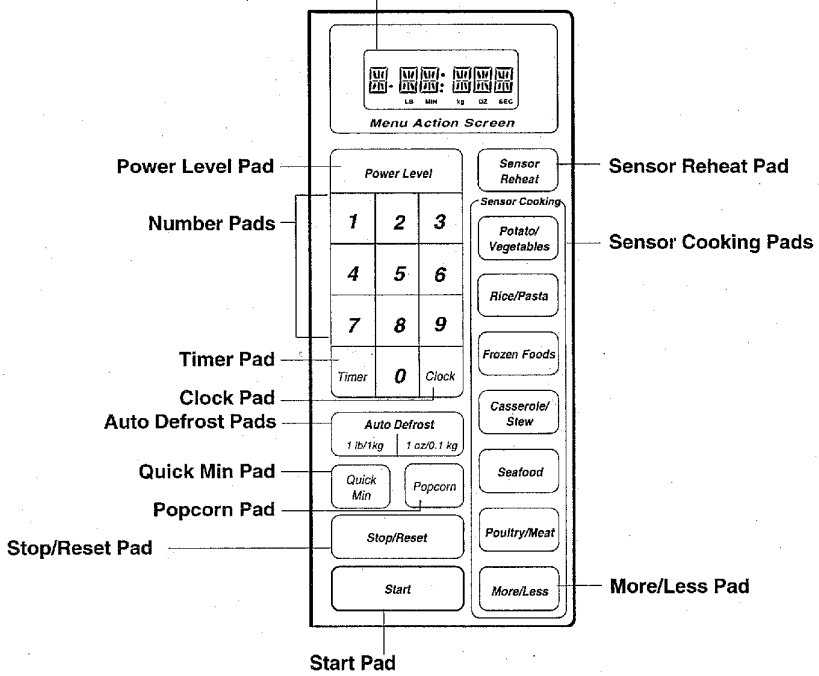
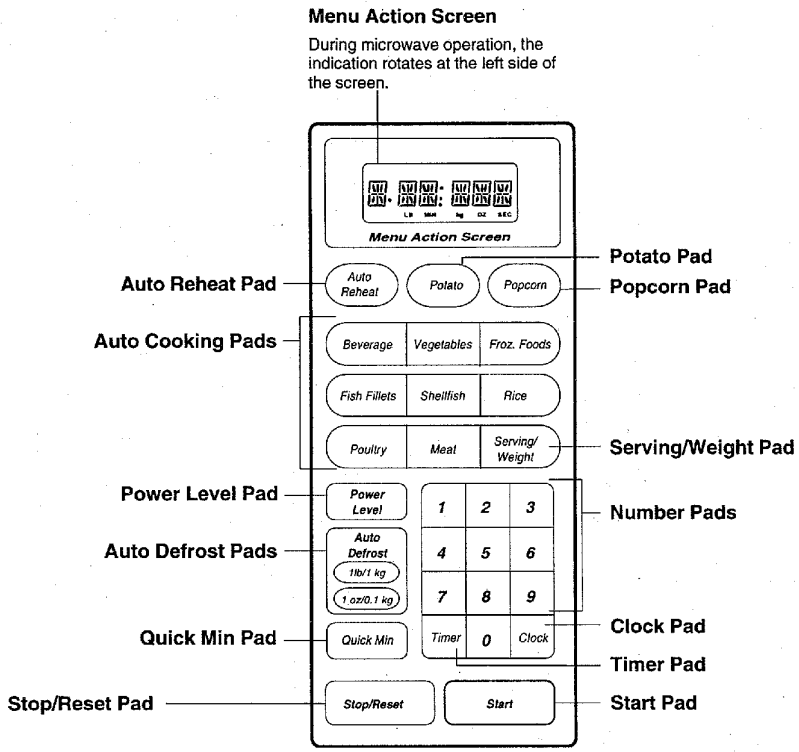
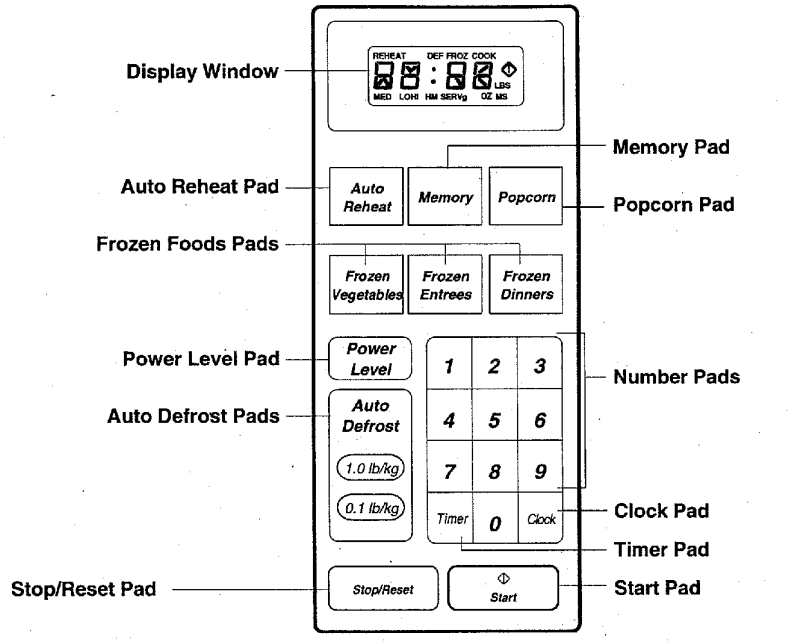


CONTROL PANEL

NN-7555A/7555C/7545C
NN-7515A/7505A



NN-7455A/7405A



OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE (For NN-77X5/75X5 Series Models)

Conversion:
The oven automatically displays in English and weight in lb/oz. If you wish to use Spanish or French and kg/g, press Start pad until the desired pair appears in the display. The conversion should be programmed directly after plugging the oven in.

Press Start	Scroll Display
——	ENGLISH/oz
once	ENGLISH/KG
twice	FRANCAIS/KG
3 times	ESPANOL/KG
4 times	ESPANOL/oz

Operation Guide on the display:
To assist you in programming, the next operation will appear in the display. When you get used to operate the oven, you can turn off the operation guide.

To turn off:

Timer → OPERATION GUIDE OFF

Press 3 times

To turn on:

Timer → OPERATION GUIDE ON

Press 3 times

1. To Set Clock

OPERATION	SCROLL DISPLAY
1. Plug the power supply cord into wall outlet.	*WELCOME TO PANASONIC ——REFER TO OPERATING INSTRUCTIONS BEFORE USE*
2. Press Clock pad.	*——SET TIME*
3. Enter time of day (TOD) by pressing appropriate Number pads.	11:25 *——PRESS CLOCK PAD*
4. Press Clock pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	11:25
5. Set for 1 minute by pressing Number pad.	1 00 MIN SEC *——PRESS START MEDIUM*
6. Press Start pad.	5 SEC
7. When 1st stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	1 00 MIN SEC
8. When 2nd stage cooking time has elapsed, oven beeps 5 times and shuts off.	*ENJOY YOUR MEAL*

2. Time Cooking for Two Stage

OPERATION	SCROLL DISPLAY
1. Place a water load in the oven.	
2. Press Power Level pad once to set High power. (1st stage)	*HIGH* *——SET TIME*
3. Set for 5 seconds by pressing Number pad.	5 SEC *——PRESS START HIGH*
4. Press Power Level pad 4 times to set Medium power. (2nd stage)	*MEDIUM* *——SET TIME*

3. Auto Weight Defrost

OPERATION	SCROLL DISPLAY
1. Set the weight for 3 pounds by pressing 1.0 lb pad.	3 00 LB OZ *——PRESS START*
2. Press Start Pad.	25 40 MIN SEC
3. Press Stop/Reset Pad twice. Oven shuts off. Time of day or colon appears in the display.	11:25

4. Auto Reheat

OPERATION	SCROLL DISPLAY
1. Press [Auto Reheat] pad twice.	*2 SERV* *——PRESS START*
2. Press [Start] pad.	3 00 MIN SEC
3. When cooking time has elapsed. Oven beeps 5 times and shuts off.	*ENJOY YOUR MEAL*

5. Popcorn

OPERATION	SCROLL DISPLAY
1. Press [Popcorn] pad once.	*POPCORN* *3.5 OZ* *——PRESS START*
2. Press [Start] pad. NN-77X5 : 2 min. 20 sec.	2 40 MIN SEC
3. When cooking time has elapsed, oven beeps 5 times and shuts off.	*ENJOY YOUR MEAL*

6. To Set Child Safety Lock

OPERATION	SCROLL DISPLAY
1. Press [Start] pad 3 times continuously. "Lock" appears in the display.	LOCK

7. To Reset Child Lock

OPERATION	SCROLL DISPLAY
1. Press [Stop/Reset] pad 3 times continuously. Time of day or colon appears in the display.	11:25

8. Demonstration Mode

The demonstration mode designed for retail store display. It is not designed for home use. Cooking will not operate during demonstration mode.
To set demonstration mode

OPERATION	SCROLL DISPLAY
1. Press Clock pad 3 times continuously. Note: To cancel demonstration mode, press Clock pad 3 times continuously.	*DEMO MODE* *——PRESS ANY KEY*

9. Sensor Cooking

NOTE: Make sure that the outer panel is installed before Sensor cooking test, since Sensor function does not operate properly without the outer panel.

OPERATION	SCROLL DISPLAY
1. Pour 150±15cc (4.5±1/2ozs) of room temperature water in a beaker, place the beaker in the center of the oven.	
2. Press the desired Sensor Cooking Category pad. e.g. Set Chicken Pieces	*CHIKEN PIECES* *——PRESS START*
3. Press [Start] pad.	AUTO
4. The steam sensor detects steam about 1.5 to 4 minutes after the Start pad is pressed. Sensor cooking (T1) automatically switches to time cooking (T2). "Auto" disappears with beep sounds and the remainder of cooking time appears in the display window. NOTE: Cooking time will vary depending on the water temperature, the shape of beaker or the power source voltage.	16 SEC 46 SEC
5. When the balance of cooking time has elapsed, oven stops and beeps 5 times.	*ENJOY YOUR MEAL*

OPERATION AND DIGITAL PROGRAMMER CIRCUIT TEST PROCEDURE (For NN-74X5 Series Models)

lb/kg Conversion: The oven automatically displays the LBS/oz symbol when using Auto Defrost feature etc. If you wish to use the kg/g, press Start Pad directly after plugging the oven in but before setting the clock.

1. To Set Clock

OPERATION	DISPLAY
1. Plug the power supply cord into wall outlet.	88:88
2. Press [Clock] pad.	
3. Enter time of day (TOD) by pressing appropriate [Time] pads.	11:25
4. Press [Clock] pad. TOD has now been resistered into the digital programmer circuit and will count up by minutes.	11:25

2. Time Cooking for Two Stage

OPERATION	DISPLAY
1. Place a water load in the oven.	
2. Press [Power Level] pad once to set High power. (1st stage)	HI
3. Set for 5 seconds by pressing [Number] pad.	HI 5
4. Press [Power Level] pad 4 times to set Medium power. (2nd stage)	MED
5. Set for 1 minute by pressing [Number] pad.	MED 1 00 M S
6. Press [Start] pad.	HI 5
7. When 1st stage cooking time has elapsed, oven automatically switches to 2nd stage cooking.	MED 1 00 M S
8. When 2nd stage cooking time has elapsed, oven beeps 5times and shuts off.	

3. Auto Weight Defrost

OPERATION	DISPLAY
1. Set the weight for 3 pounds by pressing [1.0 lb] pad.	DEF 3.0 LBS
2. Press [Start] Pad.	DEF 24 00 M S
3. Press [Stop/Reset] Pad twice. Oven shuts off.	

4. Auto Reheat

OPERATION	DISPLAY
1. Press [Auto Reheat] pad twice.	REHEAT 2 SERV
2. Press [Start] pad.	REHEAT 3 00 M S
3. When cooking time has elapsed. Oven beeps 5 times and shuts off.	• TOD reappears in the display window.

5. To Set Child Lock

This feature allows you to keep oven in safety whenever a child will operate oven by itself.
When "88:88" is displayed, press Stop/Reset pad.
You can set Child Lock when colon or time of day is displayed.

OPERATION	DISPLAY
1. Press Start pad 4 times continuously. "Lock" appears in the display.	LOCK

6. To Reset Child Lock

OPERATION	DISPLAY
1. Press Stop/Reset pad 4 times continuously. Time of day appears in the display.	11:25

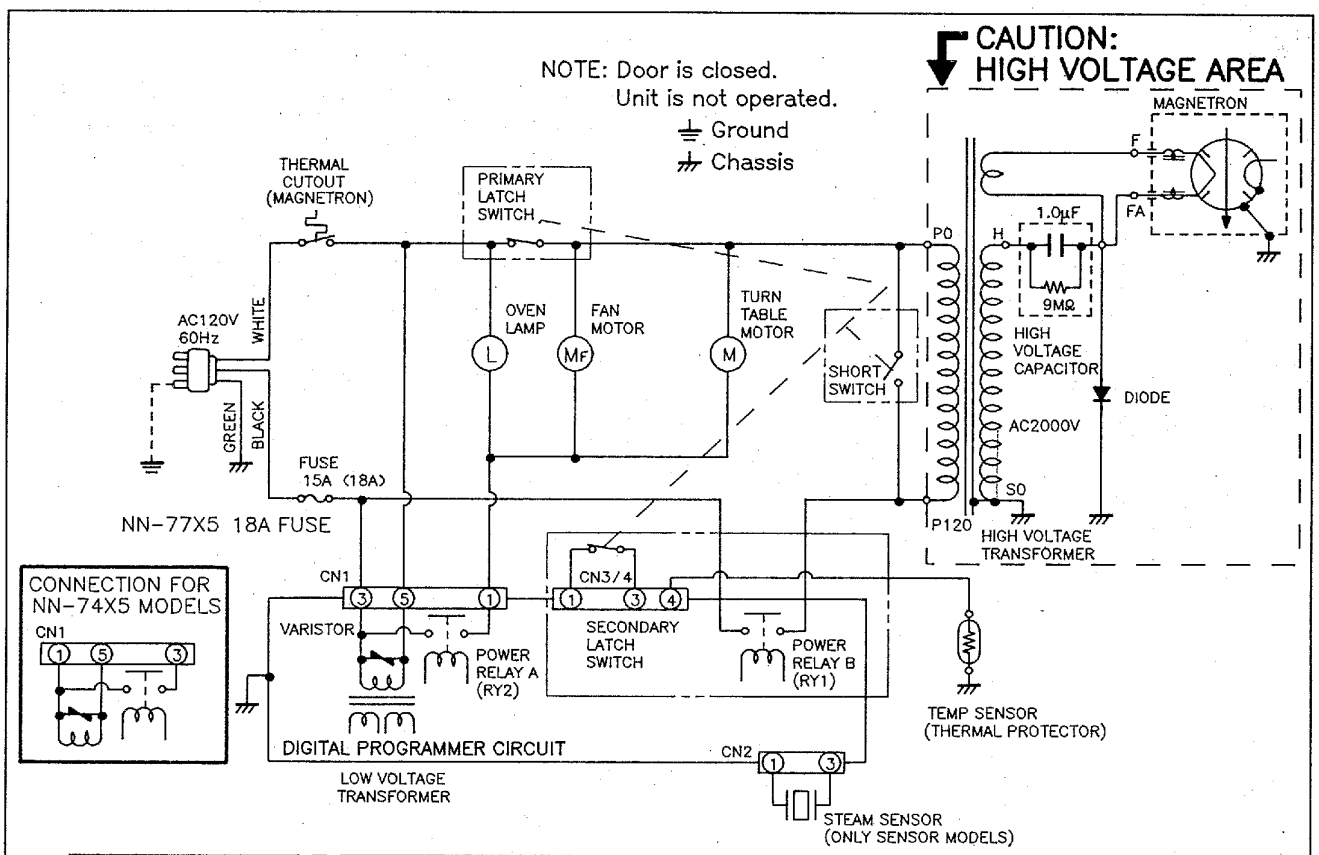
7. To Set Memory Recipe Program

OPERATION	DISPLAY
1. Press Memory pad.	Blank or old memory program is displayed.
2. Set Power level and cooking time.	MED 1 M 00 S
3. Press Memory pad. If you press Start pad, cooking will start and program is set.	11:25

8. To Start Memory Recipe Program

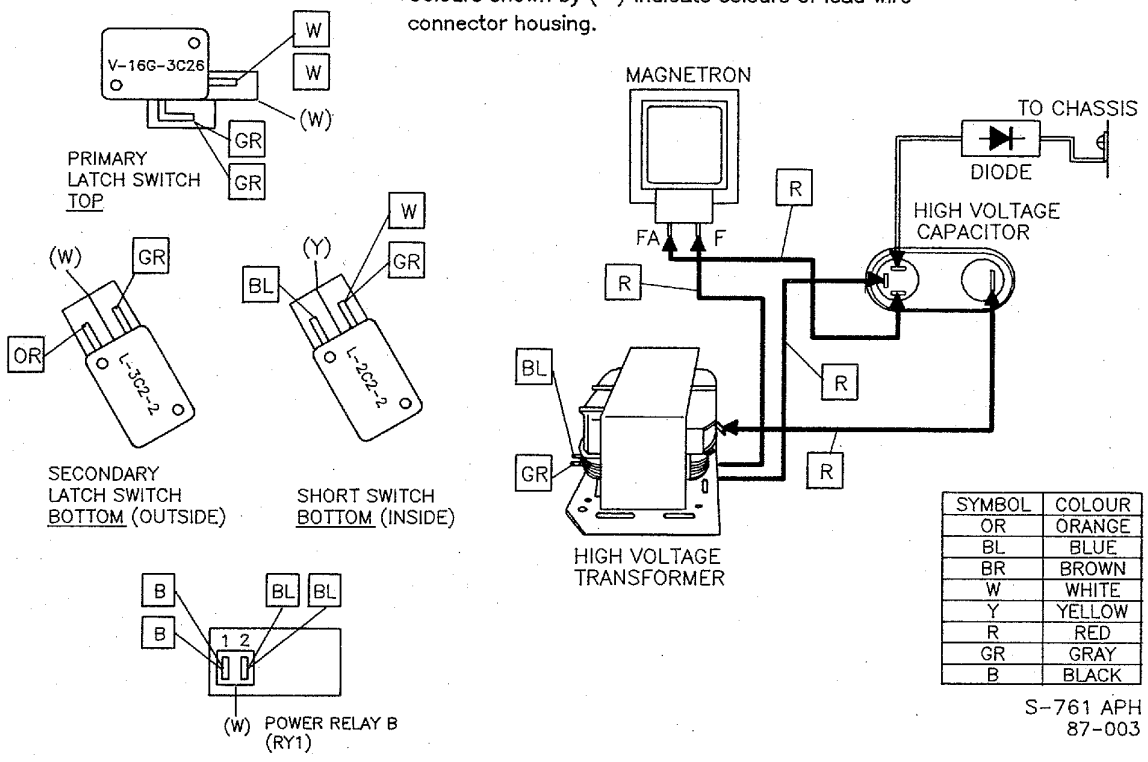
OPERATION	DISPLAY
1. Press Memory pad.	MED 1 M 00 S
2. Press Start pad.	MED 1 M 00 S

SCHEMATIC DIAGRAM (APH)



WIRING DIAGRAM

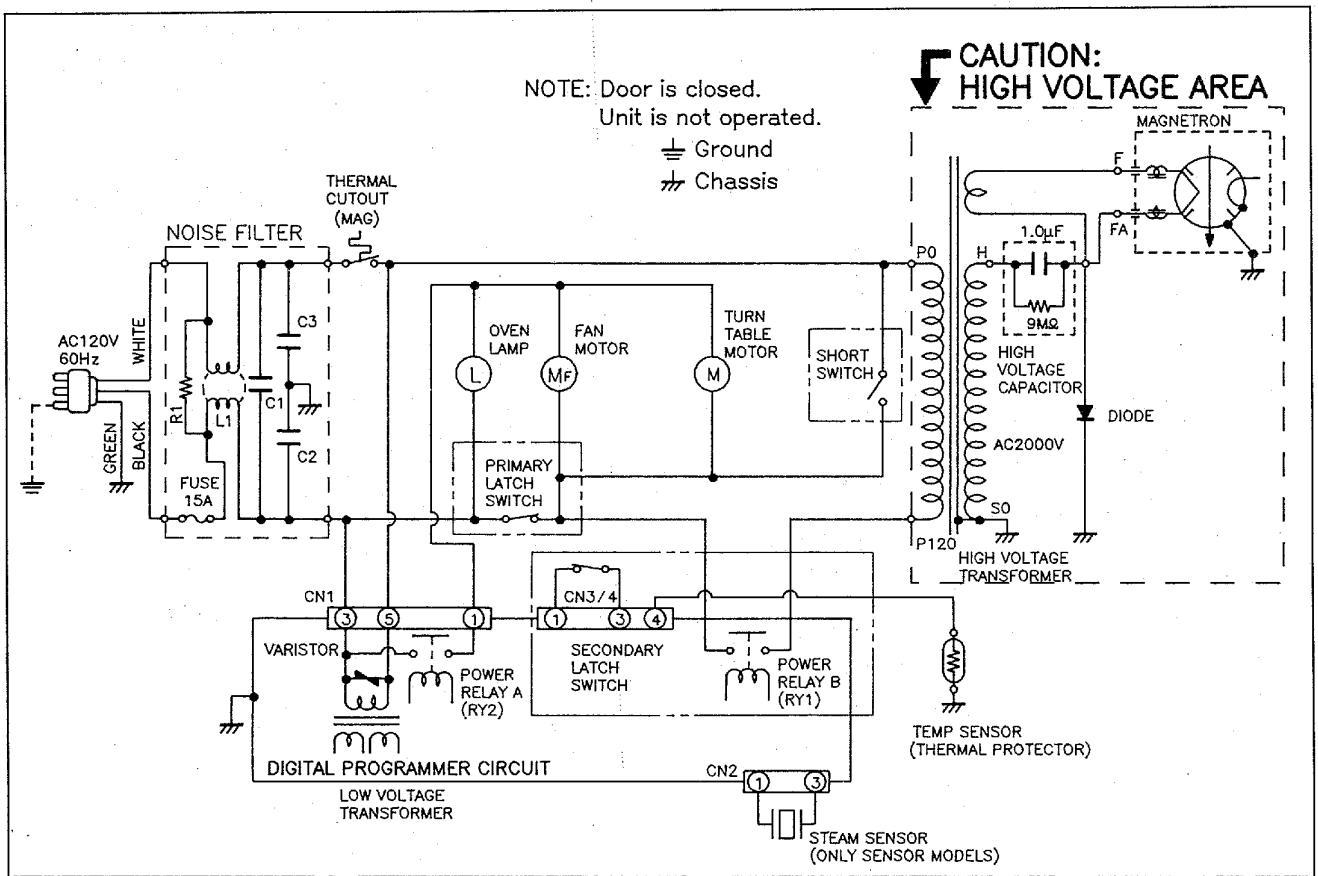
NOTE: *When replacing, check the lead wire colour as shown.
*Colours shown by ( ) indicate colours of lead wire connector housing.



SYMBOL	COLOUR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

S-761 APH
87-003

SCHEMATIC DIAGRAM (CPH)



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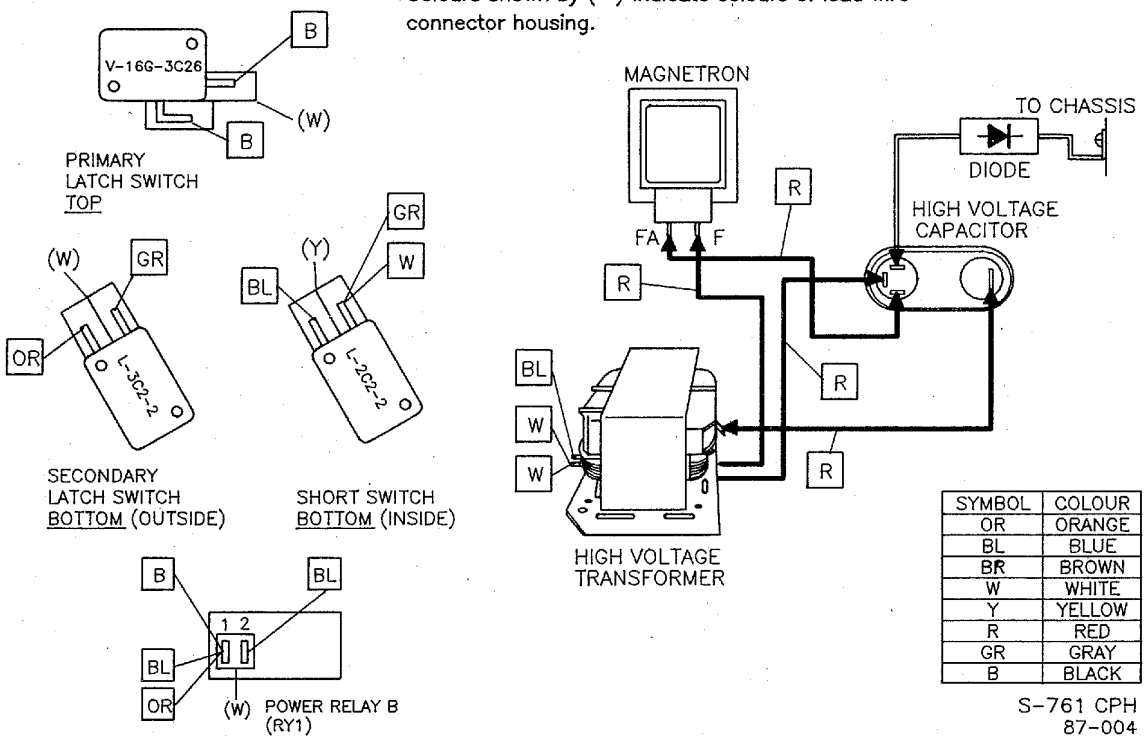


SYMBOL	COLOUR
OR	ORANGE
BL	BLUE
BR	BROWN
W	WHITE
Y	YELLOW
R	RED
GR	GRAY
B	BLACK

S-761 CPH
87-004

DESCRIPTION OF OPERATING SEQUENCE

1. Variable power cooking control

The coil of power relay B (RY1) is energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of power relay B contacts in order to vary the output power of the microwave oven from "Low" to "High" power. One complete ON and OFF cycle of power relay B is 22 seconds. The relation between indications on the control panel and the output of the microwave oven is as shown in table.

NOTE: The ON/OFF time ratio does not correspond with the percentage of microwave power since approximately 2 seconds are required for heating of magnetron filament.

2. Auto defrost, Auto reheat, Auto cook control

When those Auto Control feature is selected and the Start Pad is tapped:

(A) The digital programmer circuit determines the power level and cooking time to complete cooking and indicates the operating state in the display window.
Table shows the corresponding cooking times for respective serving by categories.

(B) When cooking time in the display window has elapsed, the oven turns off automatically by a controll signal from the digital programmer circuit.

POWER SETTING	OUTPUT POWER(%) APPROX.	ON-OFF TIME OF POWER RELAY B (RY1)	
		ON(SEC)	OFF(SEC)
HIGH	100%	22	0
MEDIUM-HIGH	70%	17	5
MEDIUM	55%	13	9
MEDIUM-LOW	30%	8	14
LOW	10%	5	17
DEFROST	30%	8	14

Auto Defrost

SELECTED WEIGHT	COOKING TIME	
	NN-74X5	NN-77X5/75X5
1.0 LB	8 min. 00 sec.	7 min. 03 sec.
6.0 LB	53 min. 20 sec.	51 min. 21 sec.

Auto Reheat

SELECTED SERVING	COOKING TIME	
	NN-74X5	NN-75X5
1	2 min. 10 sec.	2 min. 30 sec.
4	5 min. 30 sec.	5 min. 30 sec.

Potato

SELECTED QUANTITY	COOKING TIME
	NN-75X5
1 pc	5 min. 00 sec.

Auto Cooking

SELECTED MENU	COOKING TIME
BEVERAGE COFFEE — 2 MUGS	2 min. 00 sec.
MEAT BEEF-MEDIUM — 3.0 LB	38 min. 00 sec.

3. Sensor cooking

Auto sensor cooking is a revolutionary way to cook by microwave without setting a power level or selecting a time.
All that is necessary is to select an Auto Sensor Program before starting to cook.

Understanding Auto Sensor Cooking

As a food cooks, a certain amount of steam is produced. If the food is covered, this steam builds up and eventually escapes from the container. In Auto Sensor Cooking, a carefully designed instrument, called the steam sensor element, senses this escape of steam. Then, based upon the Auto Sensor Program selected, the unit will automatically determine the correct power level and the proper length of time it will take to cook the food.

NOTE: Auto Sensor Cooking is successful with the foods and recipes found in the Auto Sensor Cooking Guide. Because of the vast differences in food composition, items not mentioned in the Cooking Guide should be prepared in the microwave oven using power select and time features. Please consult Variable Power Microwave Cookbook for procedures.

Explanation of the Auto Sensor Cooking process

1) During the first 10 second period there is no microwave activity, and when calculating the T2 time by using the formula below make sure this 10 seconds is subtracted from the T1 time. In other words T1 time starts at the end of the 10 second period.
2) **T1 time**·····The total amount of time it takes the microwave oven to switch to T2 time after the 10 second period.
3) **T2 time**·····When the steam escapes from the cooking container placed in the oven, the steam sensor detects it and the microprocessor calculates the balance of cooking time. This T2 time is then shown in the display and begins counting down.

Balance of cooking time (T2 time)

The balance of cooking time which is called T2 time, can be calculated by the following formula.

T2 time (in sec.) =T1 time × K factor

NOTE: Remember, the T1 time starts after the 10 second period. The coefficient K is programmed into the microprocessor memory and they are listed in the following tables along with the P1 and P2 powers.

NOTE: When "More" or "Less" pad is selected, the K factor varies resulting in T2 time to be increased or decreased.

Example of calculating the T2 time

Example 1: If the T1 time is measured to be 2 minutes and 40 seconds after the 10 second period, and the Auto program selected is Frozen Vegetable:

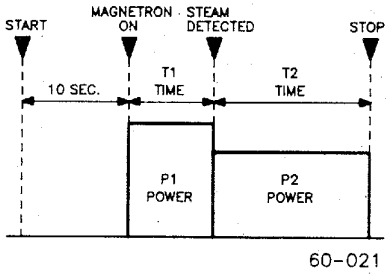
T2 = T1 × K
= 2 min. and 40 sec. × 0.1
= 160 sec. × 0.1
= 16 sec.

4. Sensor Reheat

Auto Sensor Reheat is a quick and easy way to reheat refrigerator and room temperature foods.
Simply press the reheat pad. There is no need to select power level and cooking time.

NOTE: The Auto Sensor Reheat process is same as Auto Sensor Cooking process.

AUTO SENSOR COOKING/REHEAT PROCESS



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Sensor Cooking

Category	P1 Power	P2 Power	K factor Standard
Frozen Vegetable	HIGH	HIGH	0.1

Sensor Reheat (All Sensor Models)

Category	P1 Power	P2 Power	K factor Standard
Sensor Reheat	HIGH	M.HIGH	0.1

CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION

Servicemen should remove their watches whenever working close to or replacing the magnetron.

1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

2. Warning about the electric charge in the high voltage capacitor

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor.
When replacing or checking parts, remove the power plug from the outlet and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with an insulated handle screwdriver to discharge.

WARNING

There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized.
DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING

Never touch any circuit wiring with your hand nor with an insulated tool during operation.

3. When parts must be replaced, remove the power plug from the outlet.

4. When the 15/18 Amp fuse is blown due to the operation of short switch:

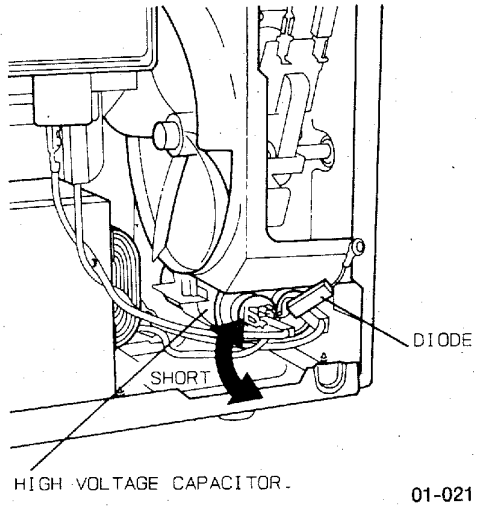
WARNING

When the 15/18 Amp. fuse is blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (RY1) when the continuity check reads shorted contacts (1-2).

(A) This is mandatory. Refer to "Adjustments and Measurement" for these switches.
(B) When replacing the fuse, confirm that it has the appropriate rating for these models.
(C) When replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.

5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.



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Touch chassis side first then short to the high voltage capacitor terminal.

6. Confirm after repair

(A) After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.
Microwaves might leak if screws are not properly tightened.
(B) Make sure that all electrical connections are tight before inserting the plug into the wall outlet.
(C) Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)

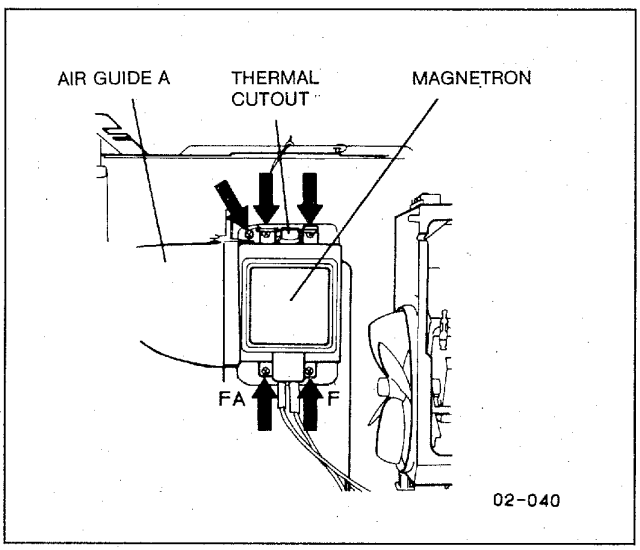
DISASSEMBLY AND PARTS REPLACEMENT PROCEDURE

1. Magnetron

(A) Discharge the high voltage capacitor.
(B) Remove 2 screws holding magnetron thermal cutout.
(C) Remove 1 screw holding air guide A.
(D) Disconnect 2 high voltage lead wires from magnetron filament terminals.
(E) Remove 4 screws holding the magnetron.
NOTE: After replacement of the magnetron, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron to prevent microwave leakage.

CAUTION
When replacing the magnetron, be sure the antenna gasket is in place.

CAUTION
When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire of high voltage transformer should be connected to "F terminal" and the lead wire from high voltage capacitor should be connected to "FA terminal".



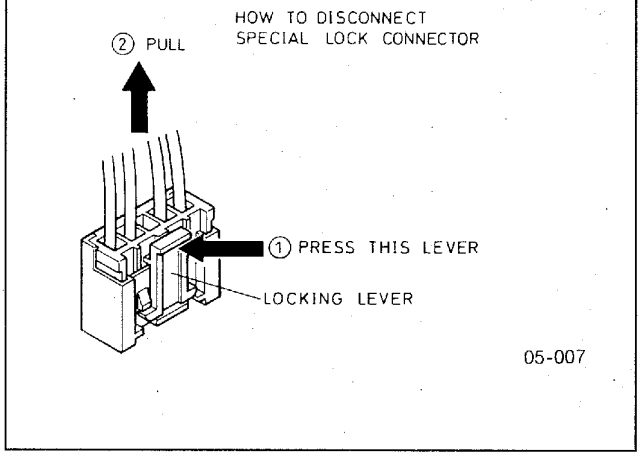
2. Digital programmer circuit (DPC) and membrane key board.

NOTE: Be sure to ground any static electric charge built up on your body, before handling the DPC.
(A) Disconnect all connectors from D.P.C.
(B) Remove 1 screw holding escutcheon base and slide the escutcheon base upward slightly.
(C) Release flat cable connector's lock of DPC by pushing both levers to inside and pull them upward, and remove flat cable of membrane key board.
(D) Remove 2 screws holding DPC.

To replace membrane key board

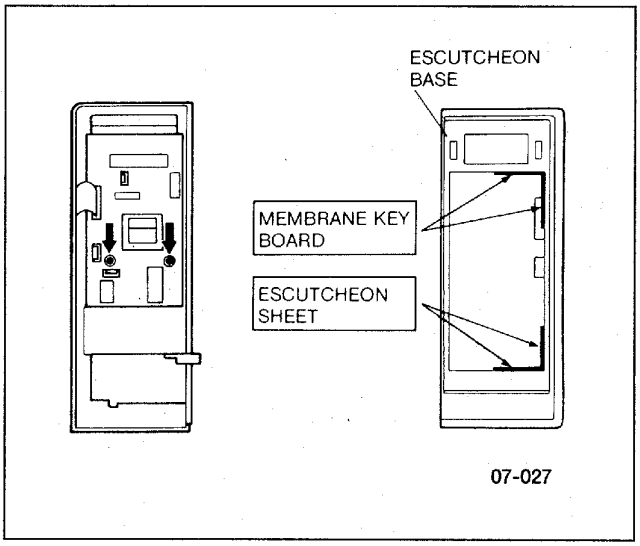
(E) Remove escutcheon bracket from escutcheon base by freeing 4 catch hooks on the escutcheon base.
(F) Peel off the tub of membrane key board from escutcheon base.
(G) Peel off the display filter from escutcheon base.
(H) Push the upper part of key board (display window portion) from back of escutcheon base and peel off escutcheon sheet and membrane key board completely from escutcheon base.

NOTE: 1. The membrane key board is attached to the escutcheon base with double faced adhesive tape. Therefore, applying hot air such as using of hair dryer is recommended for smoother removal.
2. When installing new membrane key board, make sure that the surface of escutcheon base is cleaned sufficiently so that any problems (shorted contacts or uneven surface) can be avoided.
3. Alignment position of membrane key board is as follows (see figure);
Membrane key board: Right and upper edges
Escutcheon sheet: Right and lower edges



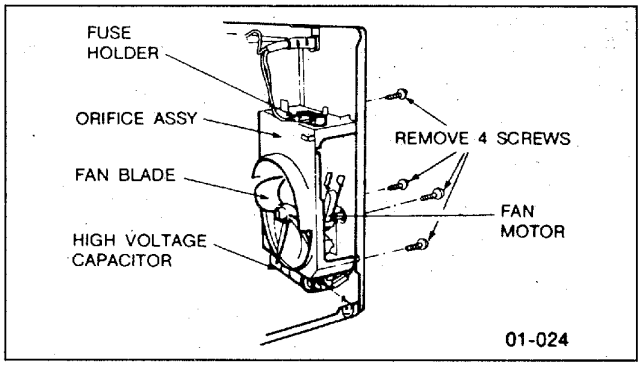
3. Low voltage transformer and/or power relays (RY1, RY2)

NOTE: Be sure to ground any static electric charge built up on your body before handling the DPC.
(A) Using solder wick or a desoldering tool and 30W soldering iron, carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.
NOTE: Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.
(B) With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.



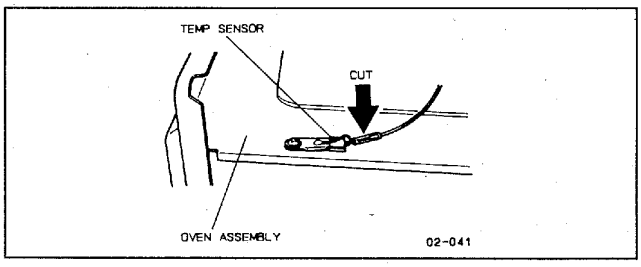
4. Fan motor

(A) Disconnect 2 lead wires from fan motor terminals.
(B) Disconnect 2 lead wires from fuse holder terminals. (APH)
Remove noise filter. (CPH)
(C) Disconnect 4 high voltage lead wires from high voltage capacitor terminals.
(D) Remove 4 screws holding fan motor and orifice assy and detach the orifice assy with fan motor from oven assy.
(E) Remove fan blade from the fan motor shaft by pulling it straight out.
(F) Separate the fan motor from the orifice assy by freeing 2 catch hooks on the orifice assy.



5. Temp sensor (thermal protector)

(A) Cut lead wire at the top of sensor terminals.
(B) Remove 1 screw holding the temp sensor and replace with new one.
(C) Solder the lead wires securely to the sensor terminals.

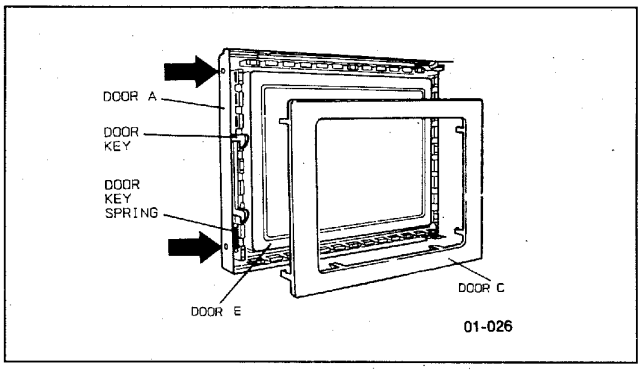


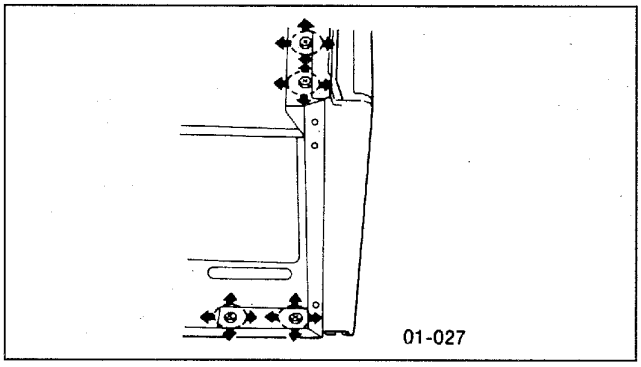
6. Door assembly

(A) Remove 3 screws holding side and bottom frames of door A.
(B) Remove door C from door E by carefully pulling outward starting from upper right hand corner.
(C) Remove door key and door key spring.
(D) Separate the door A from the door E by freeing catch hooks on the door A using a flat screwdriver.

After replacement of the defective component parts of the door, reassemble it and follow the instructions below for proper installation and adjustment so as to prevent an excessive microwave leakage.

(1) When mounting the door to the oven, be sure to adjust the door parallel to the bottom line of the oven face plate by moving the upper hinge and lower hinge in the direction necessary for proper alignment.
(2) Adjust so that the door has no play between the inner door surface and oven front surface. If the door assembly is not mounted properly, microwave may leak from the clearance between the door and oven.
(3) Perform the microwave leakage test.





7. Turntable motor

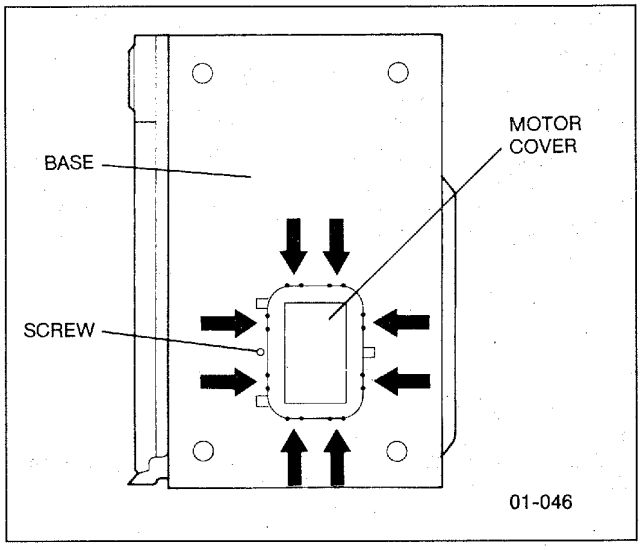
(A) Remove the motor cover by breaking off at the 8 spots indicated by arrows with a cutter or the like. (See Figure)

NOTE: After breaking off the motor cover, make sure that cut-off portions are properly trimmed off or bend to inside so that no sharp edge will expose to outside.

(B) Disconnect 2 lead wires connected to the stirrer motor.

(C) Remove the stirrer motor by removing 2 screws.

NOTE: To reinstall the motor cover, use 4X6 screw.



8. Steam sensor

(A) Remove 1 screw holding steam sensor unit.

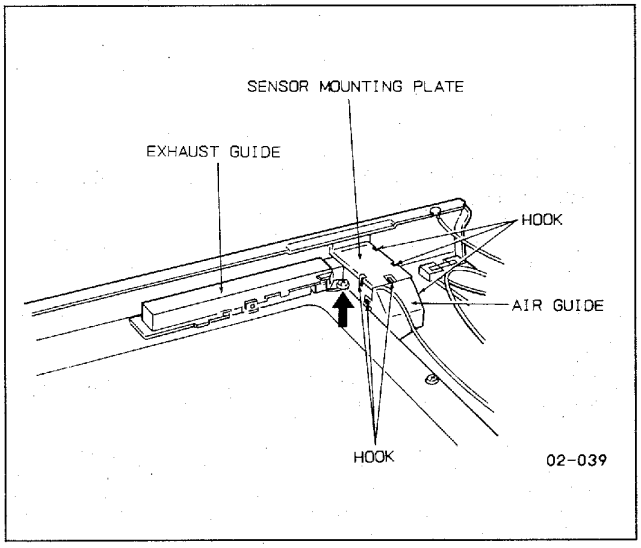
(B) Disconnect CN2 connector from digital programmer circuit board.

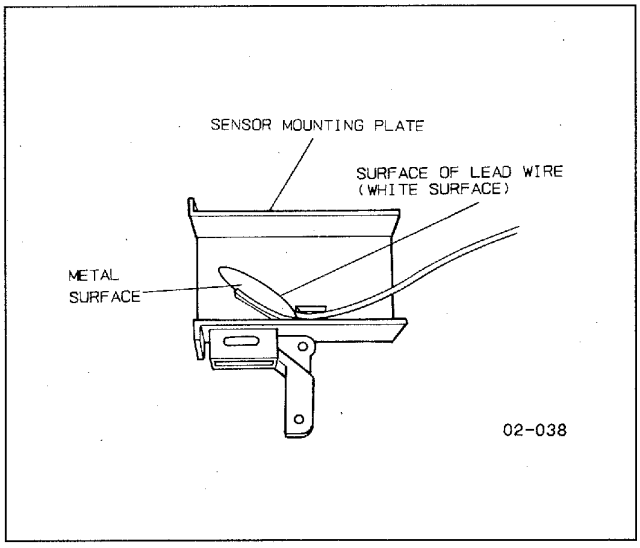
(C) Remove exhaust guide from steam sensor unit.

(D) Remove catch hooks on sensor mounting plate and air guide.

(E) Remove steam sensor from sensor mounting plate.

NOTE: When installing the steam sensor, make sure that the direction of steam sensor is as shown in figure.





COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

1. Primary Latch Switch, Secondary (Secondary Latch Switch and Power relay B) Interlocks.

(A) Unplug lead connectors to Power Relay B and verify continuity of the power relay B 1-2 terminals.
(B) Unplug lead connectors to Primary Latch Switch and Secondary Latch Switch.
(C) Test the continuity of switches at door opened and closed positions with ohm meter (low scale).
Normal continuity readings should be as follows.

	Door Opened	Door Closed
Primary Latch Switch	∞ Ω (open)	0 Ω (close)
Secondary Latch Switch	∞ Ω (open)	0 Ω (close)
Power Relay B	∞ Ω (open)	∞ Ω (open)

2. Short Switch & Monitor Circuit

(A) Unplug lead wires from H.V. transformer primary terminals.
(B) Connect test probes of ohm meter to the disconnected leads which were connected to H.V. Transformer.
(C) Test the continuity of short switch with door opened and closed positions using lowest scale of the ohm meter.
Normal continuity readings should be as follows.

Door closed	Door opened
∞ Ω	0 Ω

3. High voltage transformer

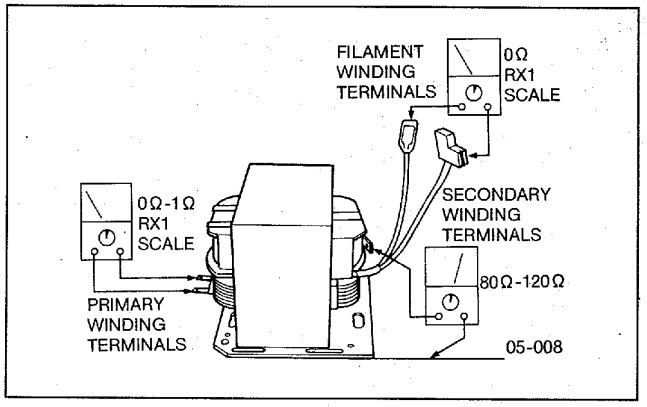
(A) Remove connections from the transformer terminals and check continuity.
(B) Normal (cold) resistance readings should be as follows:
Secondary winding ····· Approx. 80Ω~120Ω
Filament winding ····· Approx. 0Ω
Primary winding ····· Approx. 0Ω~ 1Ω

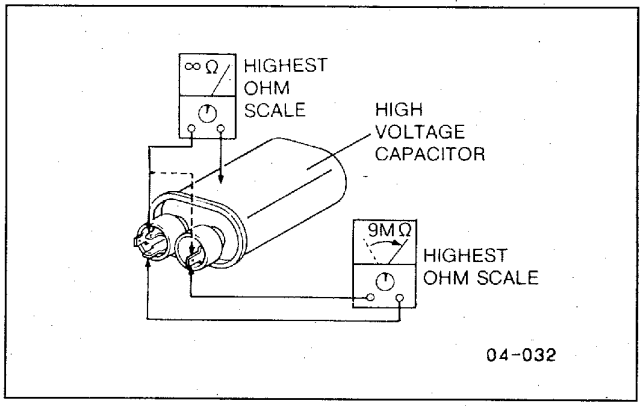
4. High voltage capacitor

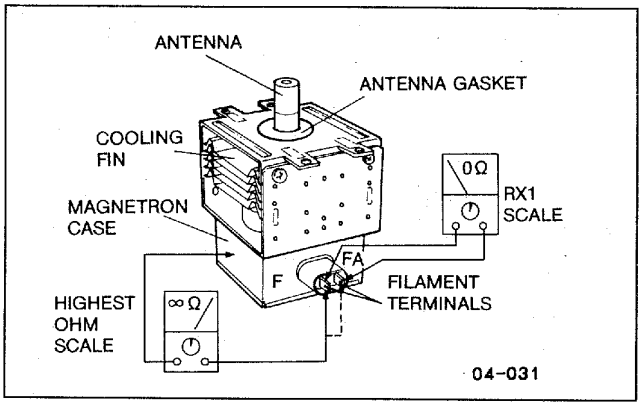
(A) Check continuity of capacitor with meter on highest OHM scale.
(B) A normal capacitor will show continuity for a short time, and then indicate 9MΩ once the capacitor is charged.
(C) A shorted capacitor will show continuous continuity.
(D) An open capacitor will show constant 9MΩ.
(E) Resistance between each terminal and chassis should be infinite.

5. Magnetron

Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.
(A) Isolate magnetron from the circuit by disconnecting the leads.
(B) A continuity check across magnetron filament terminals should indicate one ohm or less.
(C) A continuity check between each filament terminal and magnetron case should read open.

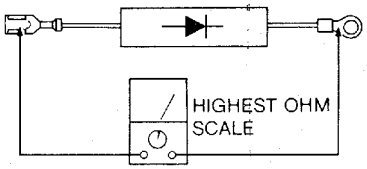






6. Diode

(A) Isolate the diode from the circuit by disconnecting the leads.
(B) With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may be read in both directions.
A normal diode's resistance will be infinite in one direction and several hundred kΩ in the other direction.



NOTE: OHMMETER SHOULD HAVE A MINIMUM 6 VOLT BATTERY.

FORWARD	REVERSE
SEVERAL HANDRED KΩ	∞Ω

04-033

7. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

8. Steam Sensor and digital programmer circuit

CAUTION

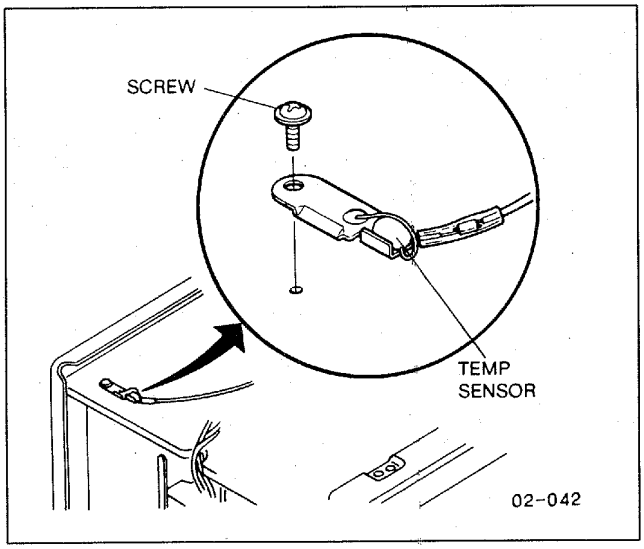
Do not touch any parts of the circuitry on the digital programmer circuit since static electric discharge may damage this control panel.
Always ground yourself while working on this panel to discharge any static charge built up on your body.

In order to determine if the steam sensor function of the digital programmer circuit is in working order or not, do the following test.
1) Place a water load (150 cc) in the oven.
2) Tap Sensor Reheat pad.
3) Tap Start Pad.
4) Steam Sensor detects steam about 1.5 to 4 minutes after the Start Pad is tapped.
5) T1 time cooking automatically switch to remaining time cooking. (T2)
6) The remaining of cooking time (T2) appears in display window. If the following cooking time appear Steam Sensor function is normal.

T1 TIME	T2 TIME (Remaining cooking time)
1 Min. 30 Sec.~4 Min.	8 Sec. ~ 23 Sec.

9. Temp sensor (Thermal protector)

A temp sensor is mounted or top of the oven cavity at the left side. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason.
The thermal protector will operate at 257°F (125°C).
The device is connected to the DPC on touch control models. When the thermal protector exceeds its temperature it will turn off the power to oven cavity and display will go to reset mode.
The cooking program can be reset after cool-down.
THERMISTOR RESISTANCE VALUE
30K-120K at 10°C-30°C (50°F-86°F)



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MEASUREMENTS AND ADJUSTMENTS

WARNING

* For continued protection against radiation hazard, replace only with identical replacement parts (For touch models Part No. ANE61424L0AG, Type No. V-16G-3C26 for Primary latch switch Part No. A61425180AP, Type No. L-3C2-2 for Secondary latch switch and Part No. A61785180AP, Type No. L-2C2-2 for short switch.)
* When the 15/18 Amp. fuse is blown due to the operation of short switch, you must replace Primary latch switch and short switch. Also replace power relay B (Part No. AEG5J1EG12B/AEG5J1EG18B, Type No. G5J-1-TP) when the continuity check reads shorted contacts (1 — 2). Then follow the adjustment procedures below.
* Interlock switch replacement — In replacing faulty switches, be sure mounting tabs are not bent, broken or otherwise deficient in their ability to hold the switches.
* Refer to schematic diagram to ensure proper connection.

1. Adjustment of Primary latch switch, Secondary latch switch and short switch

(A) When mounting Primary latch switch, Secondary latch switch and short switch to door hook assembly, mount the Primary latch switch, the Secondary latch switch and the short switch to the door hook assembly as shown in table.

NOTE: No specific adjustment during installation of Primary latch switch, Secondary latch switch and short switch to the door hook is necessary.

(B) When mounting the door hook assembly to the oven assembly, adjust the door hook assembly by moving it in the direction of arrow in table so that the oven door will not have any play in it. Check for play in the door by pulling the door assembly. Make sure that the latch keys move smoothly after adjustment is completed. Completely tighten the screws holding the door hook assembly to the oven assembly.

(C) Reconnect the short switch and check the continuity of the monitor circuit and all latch switches again by following the components test procedures.

2. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, due to the complexity of IEC test procedures, it is recommended to test the magnetron using the simple method outlined below.

Necessary Equipment:

*1 liter beaker *Glass thermometer

*Wrist watch or stopwatch

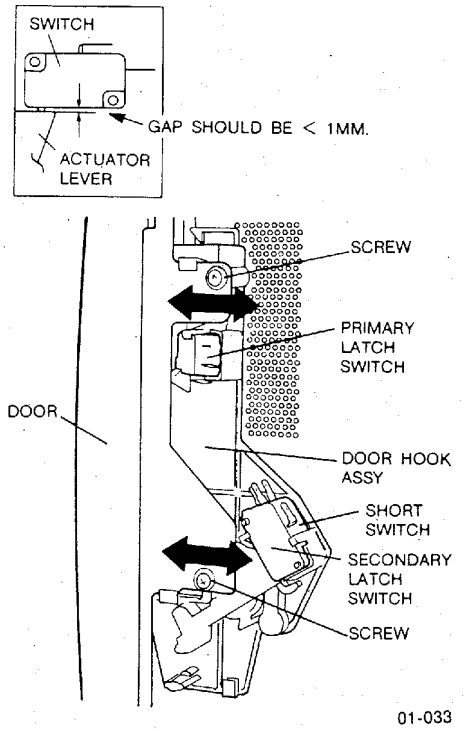
NOTE: Check the line voltage under load. Low voltage will lower the magnetron output. Take the temperature readings and heating time as accurate as possible.

(A) Fill the beaker with exactly one liter of tap water. Stir the water using the thermometer and record the beaker's temperature (recorded as T1).

(B) Place the beaker on the center of glass cook plate. Set the oven for High power and heat it for exactly one minute.

(C) Stir the water again and read the temperature of the beaker (recorded as T2).

(D) The normal temperature rise at High power position for each models is as shown in table.



Please confirm that the gap between the switch housing and switch actuator levers is no more than 1.0mm when the door is closed.

TABLE (1 ℓ -1min. test)

RATED OUTPUT	TEMPERATURE RISE
1,000W (IEC705-88)	Min. 15.4°F (8.6°C)
925W (IEC705-88)	Min. 14.4°F (8.0°C)

PROCEDURE FOR MEASURING MICROWAVE ENERGY LEAKAGE

WARNING

Check for radiation leakage after every servicing. Should the leakage be more than 2 mW/cm² (1mW/cm² for Canada) inform the MSC, PSC, or MELCA immediately. After repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S and Health and Welfare Canada regulation. This required must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE: The U.S. government standard is 5 mW/cm² while in the customer's home. 2mW/cm² stated here is our own voluntary standard. (1mW/cm² for Canada)

1. Equipment

*Electromagnetic radiation monitor
*Glass thermometer 212°F or 100°C
*600cc glass beaker

2. Procedure for measuring radiation leakage.

Note before measuring

(1) Do not exceed meter full scale deflection. Leakage monitor should initially be set to the highest scale.
(2) To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area shown in Figure no faster than 1 inch/sec (2.5 cm/sec)
(3) Leakage with the outer panel removed·····less than 5mW/cm²
(4) Leakage for a fully assembled oven with door normally closed····· less than 2mW/cm² (1mW/cm² for Canada)
(5) Leakage for a fully assembled oven [Before the latch switch (primary) is interrupted] while pulling the door ·····less than 2mW/cm²

(A) Pour 275 ± 15cc (9ozs ± 1/2oz) of 20 ±5°C (68 ± 9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.
(B) Set the radiation monitor to 2450MHz and use it following the manufacturer's recommended test procedure to assure correct results.
(C) When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.
(D) Tap the start pad or set the timer and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.

(1) Measurement with the outer panel removed.

Whenever you replace the magnetron, measure for radiation leakage before the outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING

Avoid contacting any high voltage parts.

(2) Measurements with a fully assembled oven.

After all components, including the outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.

3. Record keeping and notification after measurement

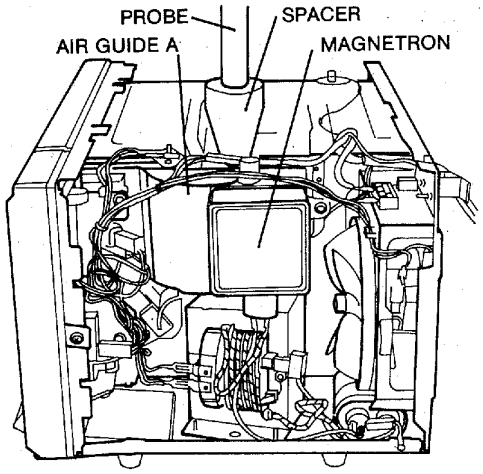
(A) After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero.
A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.

(B) Should the radiation leakage be more than 2 mW/cm² (1mW/cm² for Canada) after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify the MSC, PSC or MELCA.

4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.



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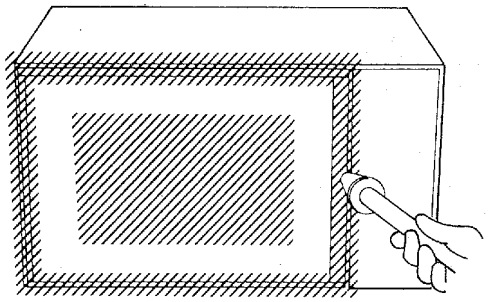


01-035

MOVE PROBE ALONG SHADED AREA (////) AROUND EXHAUST OPENINGS (as shown) AND AROUND AIR INLET OPENING

(APH/CPH)

TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
   When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect it, otherwise lead wire may be open or the connector cannot be removed.
5. Do not touch any parts of the circuitry on the digital programmer circuit, since static electric discharge may damage this control panel.
   Always touch yourself to ground while working on this panel to discharge any static charge in your body.
6. A 120V AC is present at the shaded area ▒▒ of the digital programmer circuit (Terminals of power relay's and primary circuit of low voltage transformer). When troubleshooting, be cautious of possible electrical shock hazard.

First of all operate the microwave oven following the correct operating procedures in order to find the exact cause of any trouble.

	SYMPTOM	CAUSE	CORRECTIONS
1.	Oven is dead. Fuse is OK. No display and no operation at all.	1. Open or loose lead wire harness 2. Open thermal cutout (Magnetron) 3. Open low voltage transformer 4. Defective DPC	Check fan motor when thermal cutout is defective.
2.	No display and no operation at all. Fuse is blown.	1. Shorted lead wire harness 2. Defective primary latch switch (NOTE 1) 3. Defective short switch (NOTE 1) 4. Shorted H.V. Capacitor 5. Shorted H.V. Transformer (NOTE 2)	Check adjustment of primary, secondary latch switch and short switch including door.
		NOTE 1: All of these switches must be replaced at the same time. (Refer to adjustment instructions.) Check continuity of power relay B's contacts (between 1 and 2) and if it has continuity, replace power relay B also. NOTE 2: When H.V. Transformer is replaced, check diode and magnetron also.	
3.	Oven does not accept key input (Program)	1. Key input is not in-sequence 2. Open or loose connection of membrane key pad to DPC (Flat cable) 3. Shorted or open membrane key board 4. Defective DPC	Refer to operation procedure. Refer to DPC troubleshooting.
4.	Oven lamp and fan motor turn on when oven is plugged in with door closed.	1. Misadjustment or loose wiring of secondary latch switch. 2. Defective secondary latch switch	Adjust door and latch switches.
5.	Timer starts countdown but no microwave oscillation. (No heat while oven lamp and fan motor turn on)	1. Off-alignment of latch switches 2. Open or loose connection of high voltage circuit especially magnetron filament circuit NOTE: Large contact resistance will bring lower magnetron filament voltage and causing magnetron to lower output and/or intermittent oscillation. 3. Defective high voltage component H.V. Transformer H.V. Capacitor H.V. Diode Magnetron 4. Open or loose wiring of power relay B 5. Defective primary latch switch 6. Defective power relay B or DPC	Adjust door and latch switches. Check high voltage component according to component test procedure and replace if it is defective. Refer to DPC troubleshooting

	SYMPTOM	CAUSE	CORRECTIONS
6.	Oven can program but timer does not start countdown.	1. Open or loose wiring of secondary latch switch 2. Off-alignment of secondary latch switch 3. Defective secondary latch switch	Adjust door and latch switches.
7.	Microwave output is low. Oven takes longer time to cook food.	1. Decrease in power source voltage 2. Open or loose wiring of magnetron filament circuit. (Intermittent oscillation) 3. Aging change of magnetron	Consult electrician
8.	Fan motor and oven lamp turn on when door is opened.	1. Shorted primary latch switch	Only APH Models
9.	Oven does not operate and return to plugged in mode.	1. Open or loose wiring of temp sensor 2. Defective temp sensor 3. Defective DPC	Check tighten screws on escutcheon base bracket, D.P.C. board and temp sensor.
10.	Loud buzzing noise can be heard.	1. Loose fan and fan motor 2. Loose screws on H.V. Transformer 3. Shorted H.V. Diode	
11.	Turntable motor does not rotate.	1. Open or loose wiring of turntable motor 2. Defective turntable motor	
12.	Oven stops operation during cooking	1. Open or loose wiring of primary and secondary latch switch 2. Operation of thermal cutout (Magnetron)	Adjust door and latch switches.
13.	Oven return to plugged in mode after 10 seconds elapsed in the auto sensor cooking mode.	1. Open or loose wiring of sensor terminals from DPC. 2. Open steam sensor. 3. Defective D.P.C.	Sensor Models

Trouble related to Digital Programmer Circuit (For NN-77X5/75X5 Models)

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No display when oven is first plugged in	1	Fuse pattern of DPC	Normal	STEP 2
			Open (NOTE)	Shorted circuit of ZNR, L. V. T., Oven Lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 3
	3	IC-1 pin 1 voltage (Emitter of Q1)	Abnormal	ZD1,Q1
			Normal = 5V	→ Step 4
	4	IC-1 pin 27 voltage (14 pin of IC-2)	Abnormal	IC-2
			Normal	→ IC-1, CX1, DISPLAY

NOTE

Procedure of fuse pattern repairing is as follows:

1. When the fuse pattern (PF2) opens.

(1) Remove jumper wire (PF1).

(2) Insert the removed jumper wire (PF1) to "(PF2)" position and solder it. If both "PF1" and "PF2" fuse pattern are open, please replace DPC.

2. When the fuse pattern (PF4) opens.

(1) Remove jumper wire (PF3).

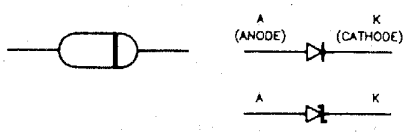
(2) Insert the removed jumper wire (PF3) to "(PF4)" position and solder it. If both "PF4" and "PF3" fuse pattern are open, please replace DPC.

NOTE:* At the time of these repairs, make visual inspection of the varistor for burning damage and examine the transformer with tester for the presence of layer short-circuit (check primary coil resistance).
If any abnormal condition is detected, replace the defective parts.

SYMPTOM	STEP	CHECK	RESULT	CAUSE/CORRECTIONS
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 23 voltage	Abnormal	IC-1
			Normal	BZ, Q6
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 8 voltage while operation	Abnormal	IC-1,
			Normal = 5V	→ Step 2
	2	short circuit between pin 1 and pin 12 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-2
No microwave oscillation at any power setting	1	IC-1 pin 5 and pin 15 voltages while operation at high power	Abnormal	IC-1
			Normal 5---5V, 15---5V	→ Step 2
	2	Q2 transistor	Abnormal	Q2
			Normal	IC-2, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY
TO BE CONTINUED FOR AUTO SENSOR MODELS				
Auto Sensor cooking does not operate normally. (Steam sensor does not detect steam from foods.)	1	Steam sensor terminal voltage by using high impedance tester (20kΩ/V), when breathe on metal surface of sensor	Abnormal = 0V	Steam sensor
			Normal ≧ 10~30mV	IC-1, IC-3
For NN-74X5 Models				
No display when oven is first plugged in	1	Fuse pattern of DPC	Normal	→ Step 2
			Open	Shorted circuit of ZNR, L. V. T., oven lamp etc. Replace DPC
	2	Low voltage transformer (LVT) secondary voltage	Abnormal 0V	LVT
			Normal	→ Step 3
	3	IC-1 pin 34 voltage (Emitter of Q1)	Abnormal	ZD1,Q1
			Normal = 5V	→ Step 4
	4	IC-1 pin 36 voltage (14 pin of IC-2)	Abnormal	IC-2
			Normal	→ IC-1, CX1, DISPLAY
No key input	1	Membrane switch continuity	Abnormal	Membrane switch
			Normal	IC-1
No beep sound	1	IC-1 pin 25 voltage	Abnormal	IC-1
			Normal	BZ
Power relay A(RY-2) does not turn on even though the program has been set and the start pad is tapped	1	IC-1 pin 3 voltage while operation	Abnormal	IC-1
			Normal = 5V	→ Step 2
	2	short circuit between pin 1 and pin 12 of IC-2	Still not turn on	RY-2
			RY-2 turns on	IC-2
No microwave oscillation at any power setting	1	IC-1 pin 6 and pin 14 voltages while operation at high power	Abnormal	IC-1
			Normal 6---5V, 14---5V	→ Step 2
	2	Q4 transistor	Abnormal	Q4
			Normal	IC-2, RY-1
Dark or unclear display	1	Replace display and check operation	Normal	DISPLAY
			Abnormal	IC-1
Missing or lighting of unnecessary segment	1	Replace IC-1 and check operation	Normal	IC-1
			Abnormal	DISPLAY

HOW TO CHECK THE SEMICONDUCTORS USING AN OHM METER

Diode



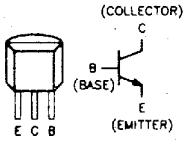
	FORWARD	REVERSE
A-K	SMALL	∞

Transistor

NPN Transistor

2SC·····

2SD·····

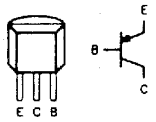


	FORWARD	REVERSE
B-E	SMALL	∞
B-C	SMALL	∞
C-E	∞	∞

PNP Transistor

2SA·····

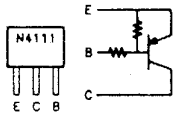
2SB·····



	FORWARD	REVERSE
E-B	SMALL	∞
C-B	SMALL	∞
C-E	∞	∞

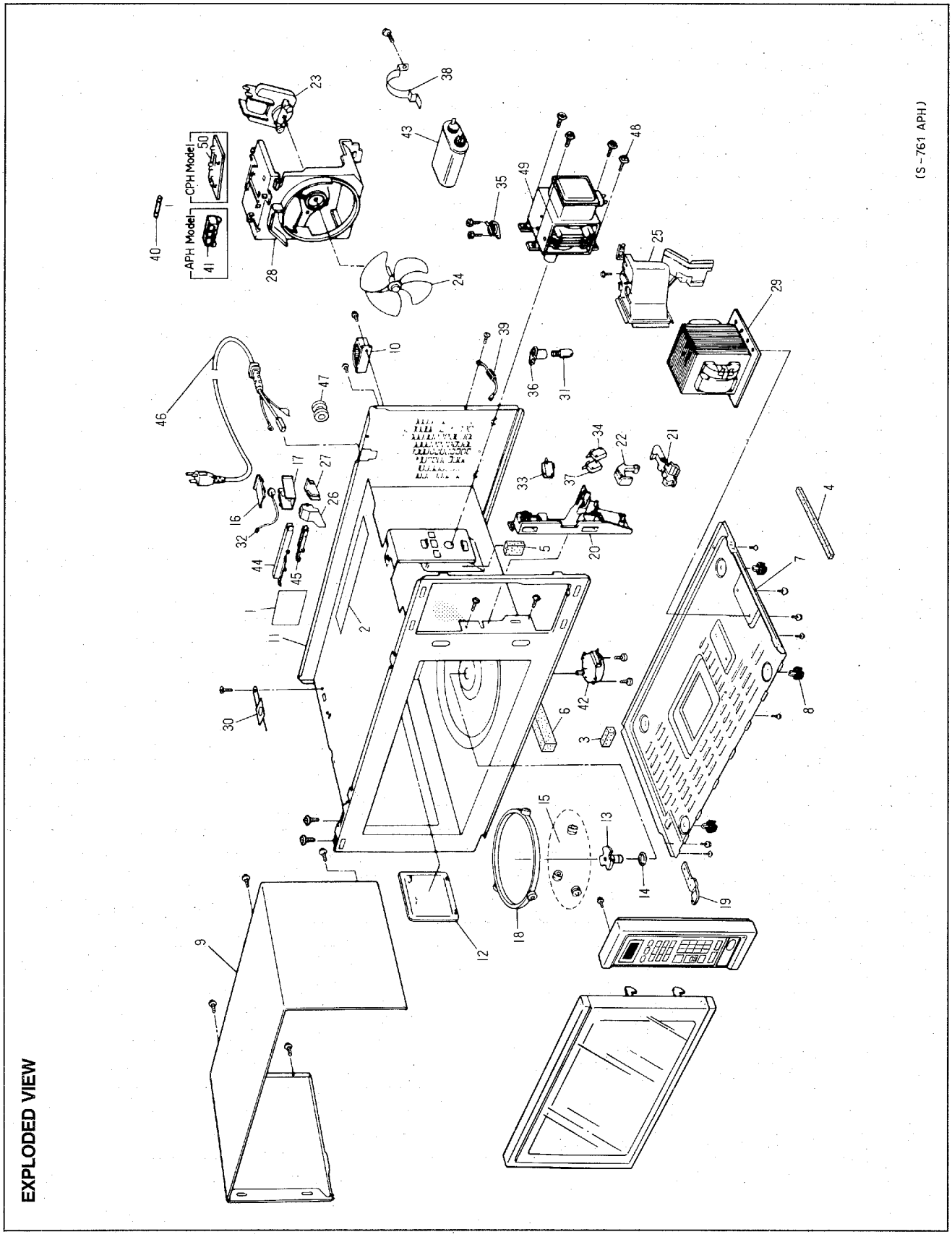
Digital Transistor

PNP Transistor



	FORWARD	REVERSE
E-B	10kΩ~30kΩ	10kΩ~30kΩ
C-B	50kΩ~90kΩ	∞
C-E	40kΩ~80kΩ	∞

EXPLODED VIEW AND PARTS LIST



PARTS LIST

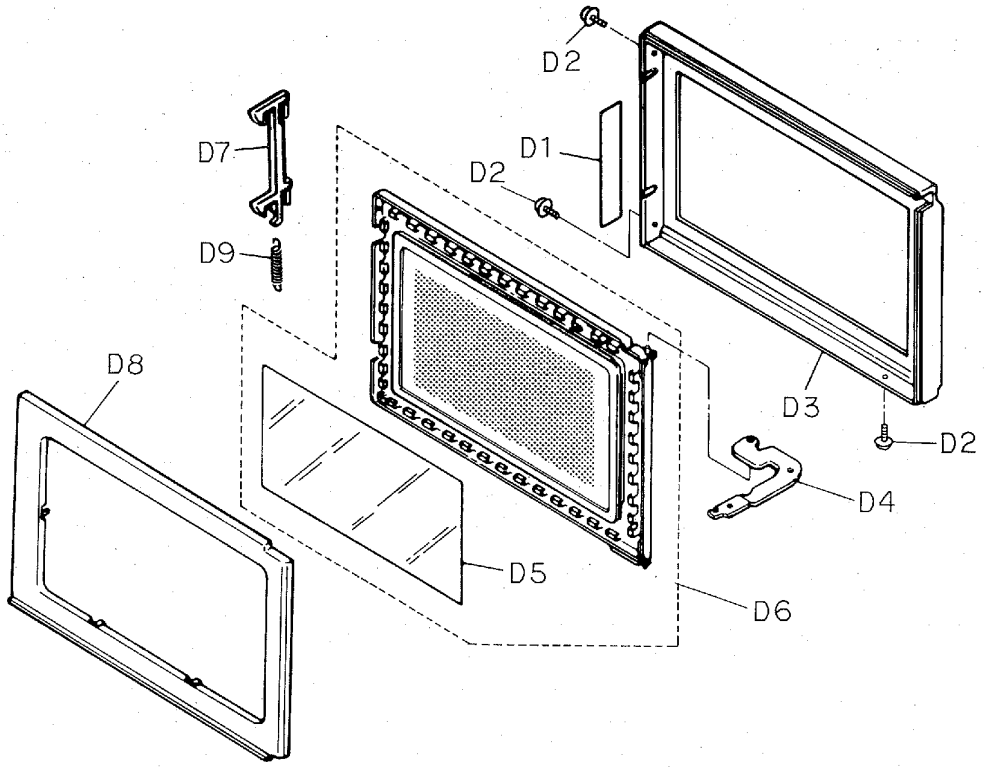
NOTE : When ordering replacement part(s), please use part number(s) shown in this parts list.
Do not use description of the part.
Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
Items marked * supplied by MMCA. (U.S.A.)

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* 1		B00065540AP	CAUTION LABEL	1	NN-7405A,NN-7505A,NN-7515A,NN-7555A, NN-7705A,NN-7755A,NN-7455A
* 1		B00067600CP	CAUTION LABEL	1	NN-7545C,NN-7555C
* 2		B00336260AP	FUSE LABEL	1	NN-7405A,NN-7505A,NN-7515A,NN-7555A, NN-7455A
* 2		B00337600CP	FUSE LABEL	1	NN-7545C,NN-7555C
* 2		B00337160AP	FUSE LABEL	1	NN-7705A,NN-7755A
* 3		AMQ0902000BA	CUSHION RUBBER A	1	
* 4		AMQ0903000AG	CUSHION RUBBER A	1	
* 5		AMQ0908000AE	CUSHION RUBBER A	1	
* 6		AMQ0928000BT	CUSHION RUBBER	1	
* 7		B10017000AP	BASE	1	
* 8		B10087050AP	RUBBER FOOT	1	
* 9		B10097000AP	CABINET BODY	1	NN-7405A,NN-7505A,NN-7515A,NN-7705A, NN-7455A
* 9		B10097010HAP	CABINET BODY	1	NN-7545C,NN-7555A,NN-7555C,NN-7755A
* 10		B11404960AQ	STOPPER	1	
* 11	⚠	B201A7030AP	OVEN	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7555A,NN-7555C,NN-7455A
* 11	⚠	B201A7010AP	OVEN	1	NN-7705A,NN-7755A
* 12		B20557050AP	COVER	1	
13		A21315540AP	PULLEY SHAFT	1	
* 14		B21777050AP	WASHER	1	
* 15		B202K4650AP	ROLLER B (U)	1	(NOTE 1)
16		A22135540AP	SENSOR BRACKET A	1	NN-7705A,NN-7755A
17		A22145540AP	SENSOR BRACKET B	1	NN-7705A,NN-7755A
* 18		B290D5500AP	ROLLER RING (U)	1	
* 19	⚠	B30077600AP	LOWER HINGE	1	
* 20	⚠	B30204830AP	DOOR HOOK	1	
* 21		B31374830AP	HOOK SPACER B	1	
* 22		B31384830AP	HOOK SPACER C	1	
* 23		B400A7000AP	FAN MOTOR	1	(AC, 30W, SINGLE)
* 24		B40085950AP	FAN	1	
* 25		B40255540AP	AIR GUIDE A	1	
26		A40265500AP	AIR GUIDE B	1	NN-7705A,NN-7755A
27		A40315500AP	AIR GUIDE C	1	NN-7705A,NN-7755A

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* 28		B41447000AP	ORIFICE	1	
* 29	⚠	B600B7050AP	H.V.TRANSFORMER	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7555A,NN-7555C,NN-7455A (1.5KVA)
* 29	⚠	B600B7160AP	H.V.TRANSFORMER	1	NN-7705A,NN-7755A (1.5KVA)
30		A601L5180AP	TEMP SENSOR	1	
* 31		B60307080AP	INCANDESCENT LAMP	1	
32		A607S7050AP	STEAM SENSOR	1	NN-7705A,NN-7755A
33	⚠	ANE61424L0AG	MICROSWITCH	1	(V-16G-3C26) PRIMARY LATCH SWITCH
34	⚠	A61425180AP	MICROSWITCH	1	(L-3C2-2) SECONDARY LATCH SWITCH
* 35	⚠	B61456210AP	THERMAL CUTOUT	1	
* 36	⚠	B61524740AQ	SOCKET	1	
37	⚠	ANE6178-5R0	MICRO SWITCH	1	(L-2C2-MR) SHORT SWITCH
* 38		B61884060AP	CAPACITOR BRACKET	1	
39	⚠	A62024000AP	DIODE,SI	1	
* 40	⚠	B62307050AP	FUSE	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7555A,NN-7555C,NN-7455A (15A)
40	⚠	A62307160AP	FUSE	1	NN-7705A,NN-7755A (18A)
41		A62314000AP	FUSE HOLDER	1	APH MODEL ONLY
* 42		B63264080AP	TURNTABLE MOTOR	1	(3W)
* 43	⚠	B63907050AP	H.V.CAPACITOR	1	(1 μ F,AC2000V)
44		A64505500AP	EXHAUST GUIDE B	1	NN-7705A,NN-7755A
45		A65435500AP	EXHAUST GUIDE C	1	NN-7705A,NN-7755A
* 46	⚠	B900C5640AP	AC CORD W/PLUG	1	(120V)
* 47		AMQ9027Q50AP	CORD BUSHING	1	
48		XTT4+8B	SCREW	4	(4X8) FOR MAGNETRON
* 49	⚠	2M210-M1E	MAGNETRON	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7555A,NN-7555C,NN-7455A
* 49	⚠	2M244-M1E	MAGNETRON	1	NN-7705A,NN-7755A
* 50		B692Y7600CP	NOISE FILTER (U)	1	CPH MODEL ONLY
*		B08877050AP	CAVITY SPRAY PAINT	1	SPRAY CAN, FOR REPAIR OF PAINTED OVEN CAVITY
*		B08877000AP	TOUCH-UP PAINT	1	BOTTLE WITH BRUSH, FOR REPAIR OF PAINTED OVEN CAVITY

NOTE 1 : When ordering the roller B assy, three rollers will be shipped.
When replacing the roller B, three rollers should be replaced at the same time.

DOOR ASSEMBLY



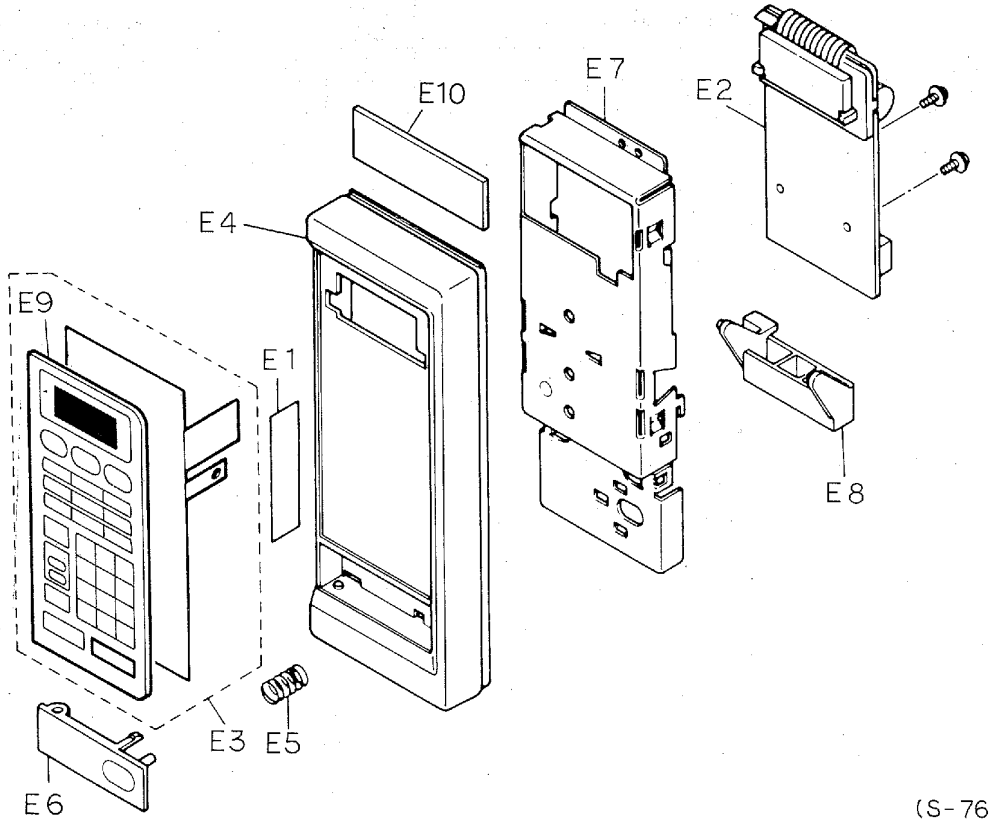
(S-761 APH)

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* D1		B02454180AP	DHHS LABEL	1	NN-7405A,NN-7505A,NN-7515A,NN-7555A, NN-7705A,NN-7755A,NN-7455A
* D1		B04114180CP	CSA LABEL	1	NN-7545C,NN-7555C
D2		XTBANE3+8BZ	SCREW	3	(3X8)
* D3	⚠	B301A7610AP	DOOR A	1	NN-7505A,NN-7515A,NN-7545C,NN-7405A (NOTE 2)
* D3	⚠	B301A7600AP	DOOR A	1	NN-7705A (NOTE 2)
* D3		B302A7600HAP	DOOR A (U)	1	NN-7555A (NOTE 2)
* D3		B302A7610HAP	DOOR A (U)	1	NN-7555A,NN-7555C (NOTE 2)
* D3	⚠	B302A7010HAP	DOOR A (U)	1	NN-7455A (NOTE 2)
* D4	⚠	B30067600AP	UPPER HINGE	1	
* D5	⚠	B31457010AP	DOOR SCREEN A	1	
* D6	⚠	B302K7600AP	DOOR E (U)	1	NN-7505A,NN-7515A,NN-7545C,NN-7705A, NN-7405A
* D6	⚠	B302K7600HAP	DOOR E (U)	1	NN-7555A,NN-7555C,NN-7755A,NN-7455A
* D7		B30187050AP	DOOR KEY	1	
* D8	⚠	B30857600AP	DOOR C	1	NN-7505A,NN-7515A,NN-7545C,NN-7705A, NN-7405A

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* D8	⚠	B30857600HAP	DOOR C	1	NN-7555A,NN-7555C,NN-7755A,NN-7455A
* D9		B30214000AP	DOOR KEY SPRING	1	

NOTE 2 : Please order DHHS label or CSA label together.

ESCUTCHEON BASE ASSEMBLY



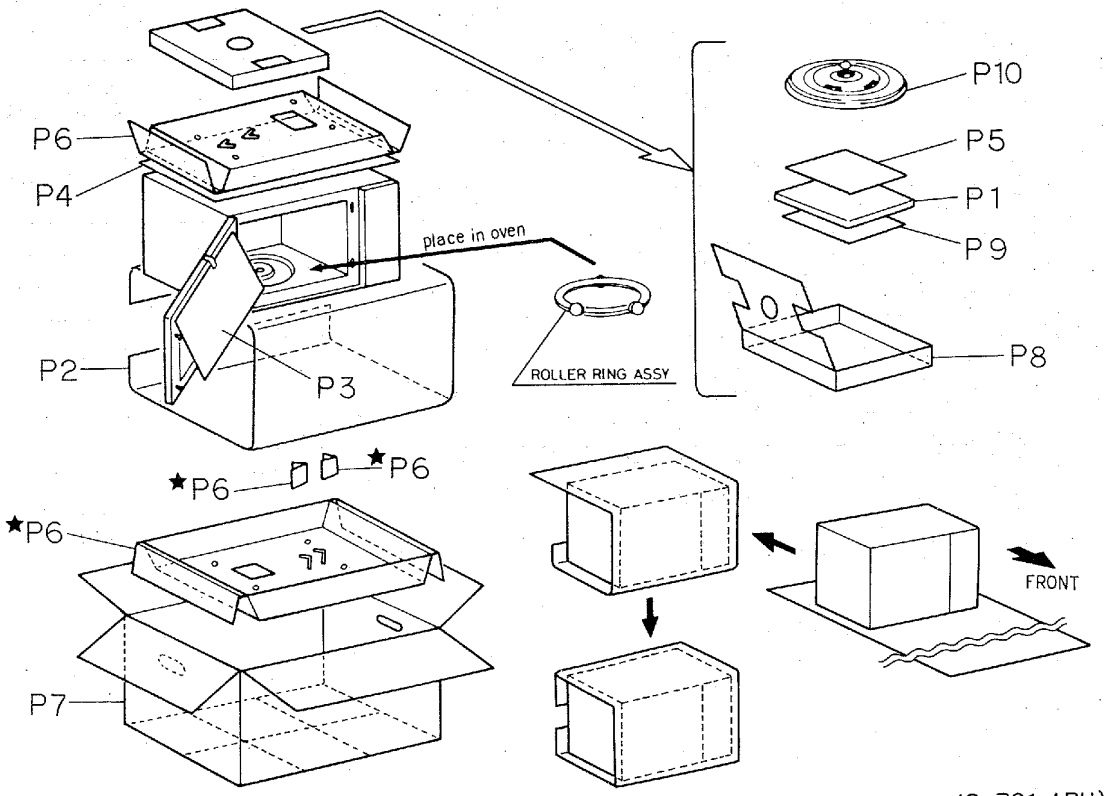
(S-761 APH)

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* E1		B00077620AP	NAME PLATE	1	NN-7405A
* E1		B00077610AP	NAME PLATE	1	NN-7505A
* E1		B00077970AP	NAME PLATE	1	NN-7515A
* E1		B00077610HAP	NAME PLATE	1	NN-7555A
* E1		B00077600AP	NAME PLATE	1	NN-7705A
* E1		B00077600HAP	NAME PLATE	1	NN-7755A
* E1		B00077620HAP	NAME PLATE	1	NN-7455A
* E2		B603L7620AP	D.P.CIRCUIT (U)	1	NN-7405A,NN-7455A RTL (W/COMPONENT)
* E2		B603L7610AP	D.P.CIRCUIT (U)	1	NN-7505A,NN-7515A,NN-7545C,NN-7555A, NN-7555C RTL (W/COMPONENT)
* E2		B603L7600AP	D.P.CIRCUIT (U)	1	NN-7705A,NN-7755A RTL (W/COMPONENT)
* E3		B630Y7620AP	MEMBRANE SWITCH (U)	1	NN-7405A (W/ESCUTCHEON SHEET)
* E3		B630Y7610AP	MEMBRANE SWITCH (U)	1	NN-7505A,NN-7545C (W/ESCUTCHEON SHEET)
* E3		B630Y7970AP	MEMBRANE SWITCH (U)	1	NN-7515A (W/ESCUTCHEON SHEET)
* E3		B630Y7610HAP	MEMBRANE SWITCH (U)	1	NN-7555A,NN-7555C (W/ESCUTCHEON SHEET)
* E3		B630Y7600AP	MEMBRANE SWITCH (U)	1	NN-7705A (W/ESCUTCHEON SHEET)
* E3		B630Y7600HAP	MEMBRANE SWITCH (U)	1	NN-7755A (W/ESCUTCHEON SHEET)
* E3		B630Y7620HAP	NAME PLATE	1	NN-7455A
* E4		B80347010AP	ESCUTCHEON BASE	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7705A (NOTE 3)
* E4		B80347010HAP	ESCUTCHEON BASE	1	NN-7555A,NN-7555C,NN-7755A,NN-7455A (NOTE 3)

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* E5		B80375950AP	COOK BUTTON SPRING	1	
* E6		B80727010AP	DOOR OPENING BUTTON	1	NN-7405A,NN-7505A,NN-7515A,NN-7545C, NN-7705A
* E6		B80727010HAP	DOOR OPENING BUTTON	1	NN-7555A,NN-7555C,NN-7755A,NN-7455A
* E7		B81277010AP	BACK PANEL	1	
* E8		B82567010AP	DOOR OPENING LEVER	1	
* E9		B83377620AP	ESCUTCHEON SHEET	1	NN-7405A
* E9		B83377610AP	ESCUTCHEON SHEET	1	NN-7505A,NN-7545C
* E9		B83377970AP	ESCUTCHEON SHEET	1	NN-7515A
* E9		B83377610HAP	ESCUTCHEON SHEET	1	NN-7555A,NN-7555C
* E9		B83377600AP	ESCUTCHEON SHEET	1	NN-7705A
* E9		B83377600HAP	ESCUTCHEON SHEET	1	NN-7755A
* E9		B83377620HAP	ESCUTCHEON SHEET	1	NN-7455A
* E10		B80027050AP	ESCUTCHEON B	1	

NOTE 3 : Please order name plate together.

PACKING AND ACCESORIES

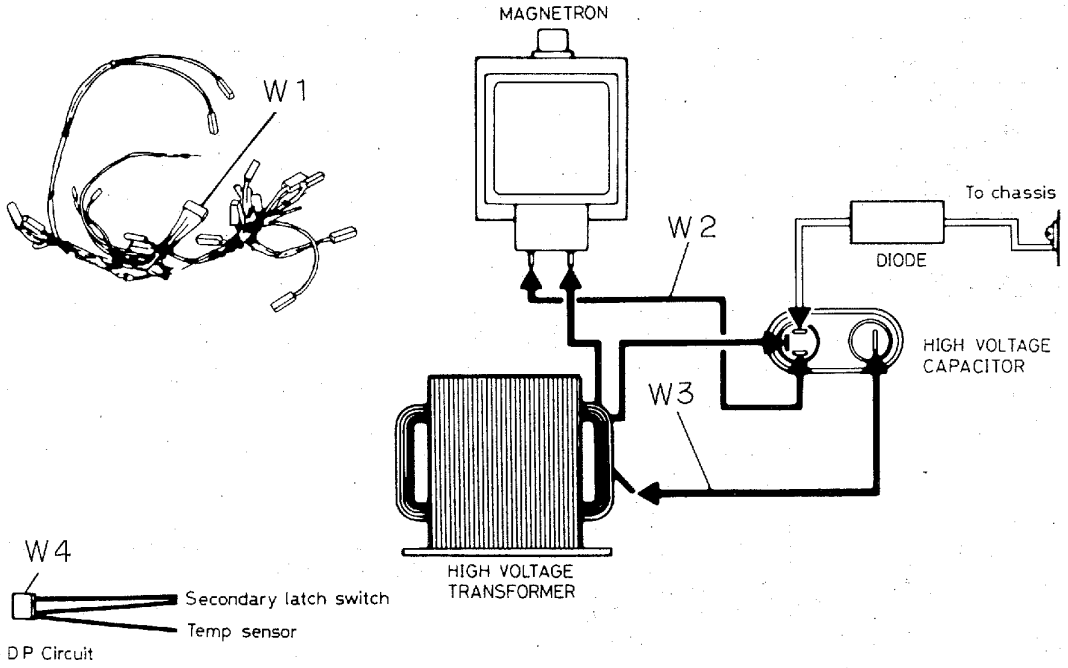


★Cut into three pieces when packing.

(S-761 APH)

* P1		B00037850AP	INSTRUCTION BOOK	1	NN-7405A,NN-7455A
* P1		B00037610AP	INSTRUCTION BOOK	1	NN-7505A,NN-7515A,NN-7555A
* P1		B00037610CP	INSTRUCTION BOOK	1	NN-7545C,NN-7555C
* P1		B00037600AP	INSTRUCTION BOOK	1	NN-7705A,NN-7755A
* P2		B01065640AP	VINYL SHEET	1	
* P3		B01077000AP	DOOR SHEET	1	
* P4		B01927050AP	TOP SHEET	1	
P5		ANE0169B60CP	SERVICE CENTER LIST	1	NN-7545C,NN-7555C
* P6		B01837000AP	CORRUGATED PACKING	2	
* P7		B02177600AP	PACKING CASE,PAPER	1	
* P8		B02217050AP	UPPER SUPPORT PACKING	1	
* P9		B04247610CP	INSTRUCTION BOOK	1	NN-7545C,NN-7555C
P10		A06014000AP	COOKING TRAY	1	

WIRING MATERIAL



(S-761 APH)

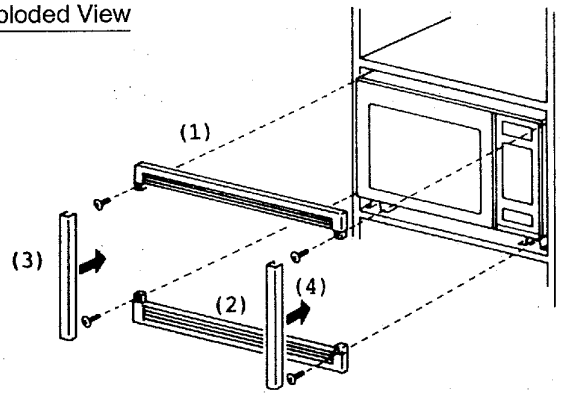
Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
* W1		B030A7650AP	LEAD WIRE HARNESS	1	NN-7405A,NN-7455A
* W1		B030A7030AP	LEAD WIRE HARNESS	1	NN-7505A,NN-7515A,NN-7555A
* W1		B030A7610CP	LEAD WIRE HARNESS	1	NN-7545C,NN-7555C
* W1		B030A7600AP	LEAD WIRE HARNESS	1	NN-7705A,NN-7755A
* W2		B03505540AP	LEAD WIRE	1	
* W3		B03515540AP	LEAD WIRE	1	
* W4		B03535300AP	LEAD WIRE	1	NN-7405A
* W4		B03537050AP	LEAD WIRE	1	NN-7505A,NN-7515A,NN-7545C,NN-7555A, NN-7555C,NN-7705A,NN-7755A

Ref. No.		Part No.	Part Name & Description	Pcs/ Set	Remarks
REF NO. 50 NOISE FILTER (U)					
C1		ECQU2A104MN	POLYESTER CAPACITOR	1	0.1MF, 250V, ±20%
C2,3	⚠	ECKDNS472MEX	CERAMIC CAPACITOR	2	0.0047MF, 250V, ±20%
F1		A62316010BP	FUSE HOLDER	2	
L1		A621A7600CP	FILTER COIL	1	
R1		ERD25FJ564S	CARBON FILM RESISTOR	1	560kΩ, 1/4W, ±5%
ZNR2,3		ERZC10DK112W	VARISTOR	2	

CANADA MODEL ONLY

PARTS LIST FOR MICROWAVE OVEN TRIM KITS

Exploded View



Trim kit Model No.	Top and Bottom Strip Ref No:1.2	Pcs/ Set	Side Strip Ref No:3.4	Pcs/ Set	Microwave Oven Model No.
NN-TK707W	A16031J0HCP	2	A1601A020HCP	2	NN-7545C,NN-7555C

NOTE: The top and bottom strips have the same part number and the left and right side strips also have the same part number. These parts will be supplied on one piece per one part number.

(S-761 APH)

DIGITAL PROGRAMMER CIRCUIT

(For NN-74X5, NN-64X5, NN-54X5, MQS1253/1252/1251, MQS0853/0852/0851)

PARTS LIST NOTE: Items marked * are supplied by MMCA. (U.S.A.)

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
BZ	AEFB22EP2002	BUZZER	1	2.0KHZ
C1	ECEA1VU561YE	ELECTROLYTIC CAPACITOR,AL	1	560μF/35V/ −20%+20%
C2	ECEA1HU101B	ELECTROLYTIC CAPACITOR,AL	1	100μF/50V/ −20%+20%
C3,4,23	AECF50F104Z	CERAMIC CAPACITOR	3	0.1μF/50V/ −20%+80%
C5	ECEA1CKA100B	ELECTROLYTIC CAPACITOR,AL	1	10μF/16V/ −20%+20%
C12,13,14, 16,17,18,19	ECBT1E103ZF5	CERAMIC CAPACITOR	7	0.01μF/25V/ −20%+80%
C15	ECEA1HKA2R2B	ELECTROLYTIC CAPACITOR,AL	1	2.2μF/50V/ −20%+20%
CN1	AEEMMC01505W	CONNECTOR	1	5PIN
CN2	AEEM11FDZBTM	CONNECTOR	1	11PIN
CN3	AEEMMC00F04W	CONNECTOR	1	4PIN
CX1	AEFFT4R19GWT	CERAMIC RESONATOR	1	4.19MHZ
D1,2	AEDNERA1502	DIODE,SI	2	(1A)
D4,5,7,8,9, 10,11,12	MA196-(TA5)	DIODE,SI	8	(0.1A)
D6	MA700A-(TA)	DIODE,SI	1	(0.03A)
DISP	A64566210AP	FLUORESCENT TUBE	1	
*IC1	AEICC4177056	L.S.I	1	NN-7405A/7455A
*IC1	AEICC4177028	L.S.I	1	NN-6485A/C NN-6475A/C NN-6425A NN-6405A MQS1253 MQS1252 MQS1251
*IC1	AEICC4177027	L.S.I	1	NN-5425A/C NN-5485C NN-5475C NN-5455C NN-5405A MQS0853 MQS0852 MQS0851
IC2	AN6752	IC	1	
Q1	2SD2006QRTA	TRANSISTOR,SI,1.2W	1	120MHZ
Q4	2SD1991AQSTA	TRANSISTOR,SI,400MW	1	150MHZ
R1,2	ERDS2TJ201T	CARBON FILM RESISTOR	2	200Ω,1/4W ±5%
R3,4	ERDS2TJ332T	CARBON FILM RESISTOR	2	3.3KΩ,1/4W ±5%
R5,23,25,26, 30,33	ERDS2TJ103T	CARBON FILM RESISTOR	6	10KΩ,1/4W ±5%
R6	ERDS2TJ4R3T	CARBON FILM RESISTOR	1	4.3Ω,1/4W,±5%
R7	ERDS2TJ301T	CARBON FILM RESISTOR	1	300Ω,1/4W,±5%
R17,19,20, 24,28,38	ERDS2TJ104T	CARBON FILM RESISTOR	6	100KΩ,1/4W ±5%
R22	ERDS2TJ202T	CARBON FILM RESISTOR	1	2KΩ,1/4W ±5%
R27	ERDS2TJ333T	CARBON FILM RESISTOR	1	33KΩ,1/4W ±5%
R29,31,32	ERDS2TJ161T	CARBON FILM RESISTOR	3	160Ω,1/4W,±5%
R34	ERDS2TJ432T	CARBON FILM RESISTOR	1	4.3KΩ,1/4W ±5%
R39	ERDS2TJ153T	CARBON FILM RESISTOR	1	15KΩ,1/4W ±5%
RY1	AEG5J1EM12B	POWER RELAY	1	(12V)
RY2	AEBG5B18P-1	POWER RELAY	1	(18V)
*SPACER	B82845570AP	SPACER CUSHION	1	
T1	A62494010AP	L.V.TRANSFORMER	1	ETP35K136A
Z1	AEXBM4X204JT	COMPOUND-RESISTOR	1	200KΩX4
ZD1	AEDZ5R6ES3T1	DIODE,SI	1	
ZD2	AEDZ27ES3T1	DIODE,SI	1	
ZD3	AEDZ4R3ES1T1	DIODE,SI	1	
ZNR	ERZC10DK471F	VARISTOR	1	
JPR2	ERD25VJ393T	CARBON FILM RESISTOR	1	NN-5425A/C NN-5485C NN-5475C NN-5455C NN-5405A MQS0853 MQS0852 MQS0851 39KΩ,1/4W ±5%

SERVICE FIXTURES AND TOOLS

EXTENSION CABLES

NOTE: To be used when repairing the DPC board assembly directly on the oven for easy access of the board.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	AT40M004	4 pin Extension Cable	1	Cable No. 16
	AT40M005	5 pin Extension Cable	1	Cable No. 17
	AT40E006	1 pinX6 Extension Cable	1	Cable No. 9

DPC COMMON CHECKER AND ITS CABLE

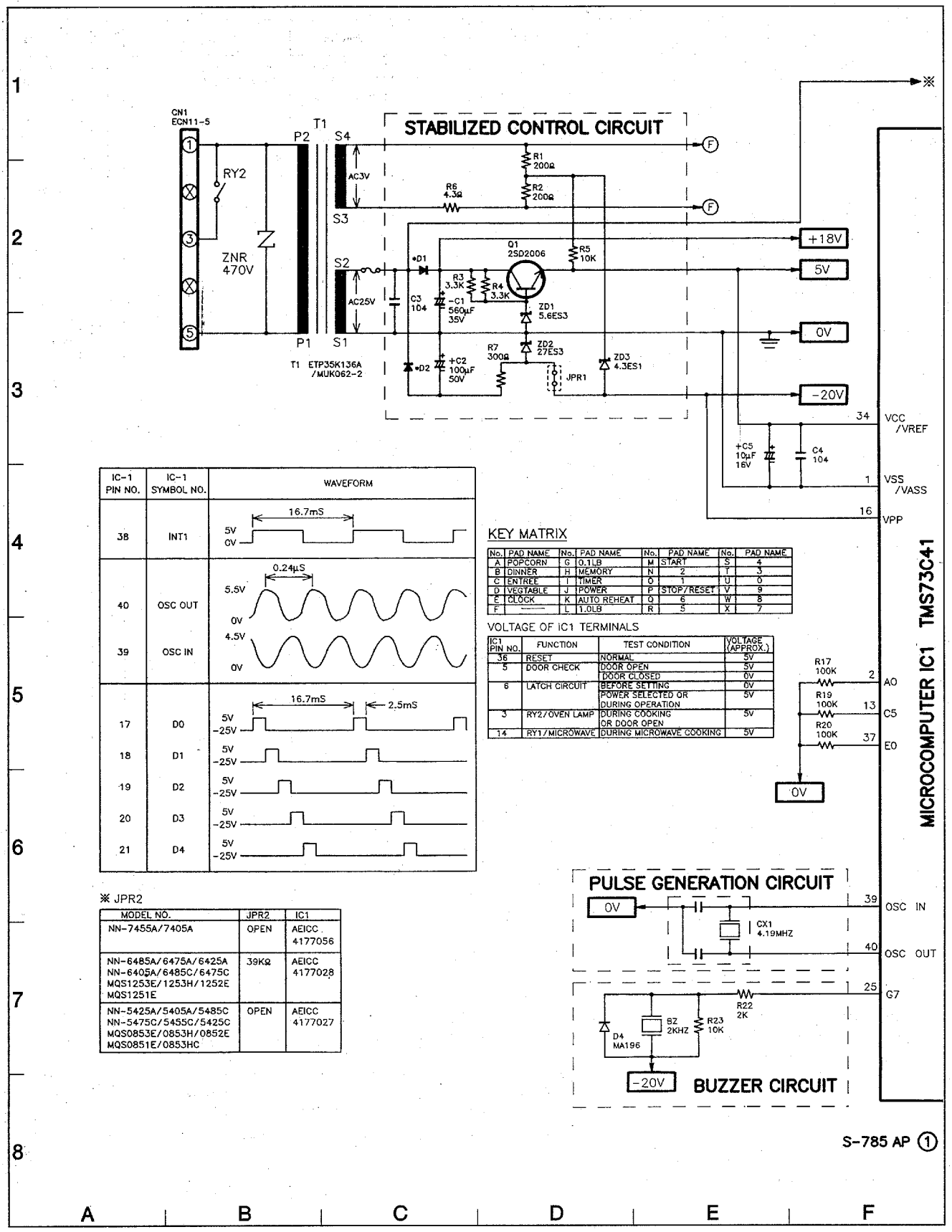
NOTE: To be used only when DPC common checker is available.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	ANE600ZK70AP	DPC. Common Checker	1	
	AT30A5500AP	DPC. Checker Cable	1	NOTE

(S-764 APH)

DIGITAL PROGRAMMER CIRCUIT (NN-74X5, NN-64X5, NN-54X5, MQS1253/1252/1251, MQS0853/0852/0851)

SCHEMATIC DIAGRAM



IC-1 PIN NO.	IC-1 SYMBOL NO.	WAVEFORM
38	INT1	16.7mS, 5V, 0V
40	OSC OUT	0.24μS, 5.5V, 0V
39	OSC IN	4.5V, 0V
17	D0	16.7mS, 2.5mS, 5V, -25V
18	D1	5V, -25V
19	D2	5V, -25V
20	D3	5V, -25V
21	D4	5V, -25V

KEY MATRIX

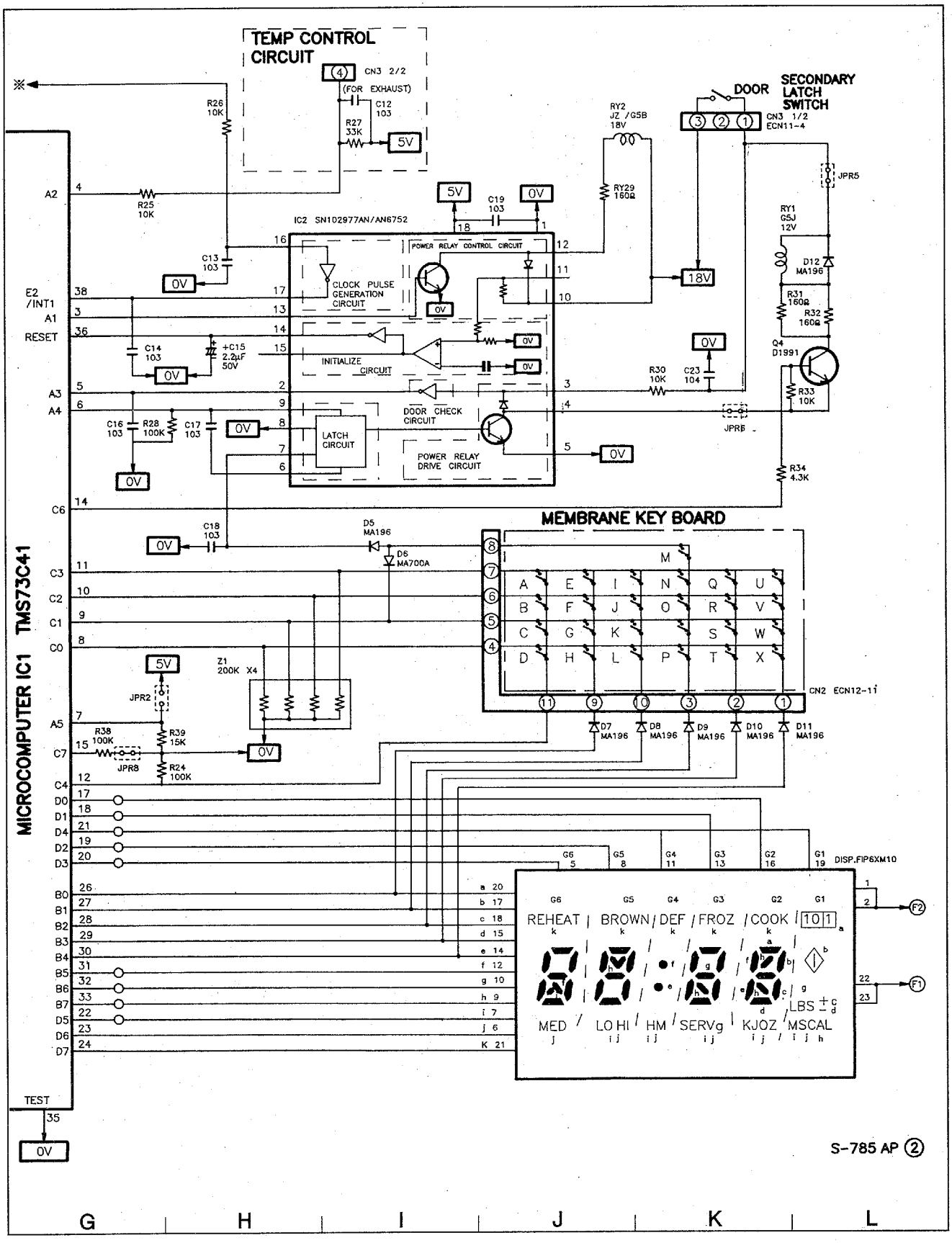
No.	PAD NAME	No.	PAD NAME	No.	PAD NAME	No.	PAD NAME
A	POPCORN	G	0.1LB	M	START	S	4
B	DINNER	H	MEMORY	N	2	T	5
C	ENTREE	I	TIMER	O	1	U	0
D	VEGTABLE	J	POWER	P	STOP/RESET	V	9
E	CLOCK	K	AUTO REHEAT	Q	6	W	8
F	———	L	1.0LB	R	5	X	7

VOLTAGE OF IC1 TERMINALS

IC1 PIN NO.	FUNCTION	TEST CONDITION	VOLTAGE (APPROX.)
36	RESET	NORMAL	5V
5	DOOR CHECK	DOOR OPEN	5V
		DOOR CLOSED	0V
6	LATCH CIRCUIT	BEFORE SETTING	0V
		POWER SELECTED OR DURING OPERATION	5V
3	RY2/OVEN LAMP	DURING COOKING OR DOOR OPEN	5V
14	RY1/MICROWAVE	DURING MICROWAVE COOKING	5V

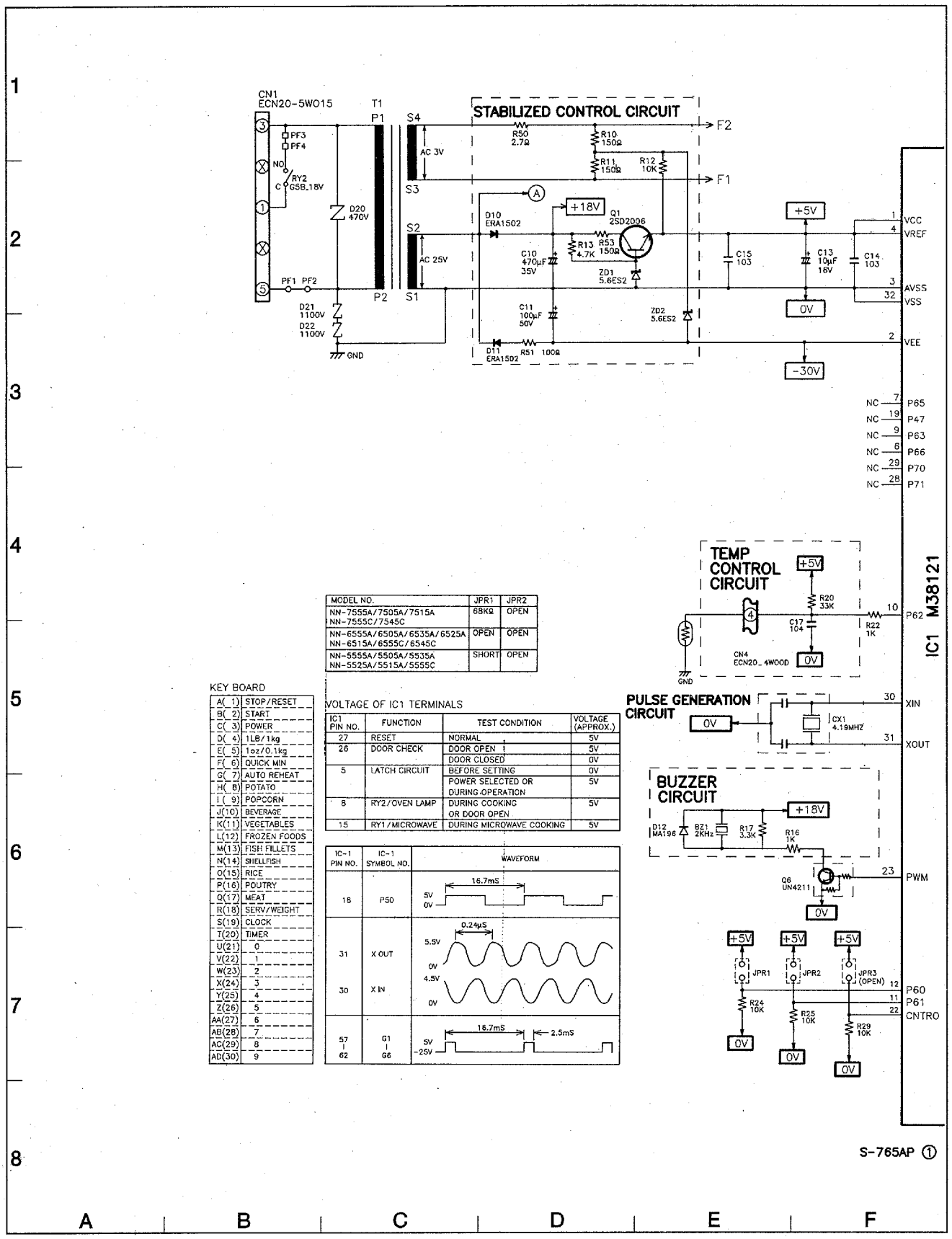
※ JPR2

MODEL NO.	JPR2	IC1
NN-7455A/7405A	OPEN	AEICC 4177056
NN-6485A/6475A/6425A NN-6405A/6485C/6475C MQS1253E/1253H/1252E MQS1251E	39KΩ	AEICC 4177028
NN-5425A/5405A/5485C NN-5475C/5455C/5425C MQS0853E/0853H/0852E MQS0851E/0853HC	OPEN	AEICC 4177027


TEMP CONTROL CIRCUIT
CN3 2/2
(FOR EXHAUST)
C12 103
R27 33K
5V
R26 10K
DOOR SECONDARY LATCH SWITCH
CN3 1/2 ECN11-4
RY2 JZ /G5B 18V
RY29 160Ω
JPR5
RY1 G5J 12V
D12 MA196
R31 160Ω
R32 160Ω
Q4 D1991
R33 10K
R34 4.3K
18V
R30 10K
C23 104
JPR6
IC2 SN102977AN/AN6752
C19 103
POWER RELAY CONTROL CIRCUIT
CLOCK PULSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
C13 103
C14 103
+C15 2.2μF 50V
C16 103
R28 100K
C17 103
C18 103
D5 MA196
D6 MA700A
MEMBRANE KEY BOARD
CN2 ECN12-11
D7 MA196
D8 MA196
D9 MA196
D10 MA196
D11 MA196
Z1 200K X4
JPR2
R38 100K
R39 15K
JPR8
R24 100K
MICROCOMPUTER IC1 TMS73C41
A2
E2 /INT1
A1 RESET
A3
A4
C6
C3
C2
C1
C0
A5
C7
C4
D0
D1
D4
D2
D3
B0
B1
B2
B3
B4
B5
B6
B7
D5
D6
D7
TEST
0V
DISP.FIP6XM10
REHEAT
BROWN
DEF
FROZ
COOK
MED
LO HI
HM
SERVg
KJOZ
MSCAL
LBS
S-785 AP ②

DIGITAL PROGRAMMER CIRCUIT (NN-75X5, NN-65X5, NN-55X5)

SCHEMATIC DIAGRAM



MODEL NO.	JPR1	JPR2
NN-7555A/7505A/7515A NN-7555C/7545C	68KΩ	OPEN
NN-6555A/6505A/6535A/6525A NN-6515A/6555C/6545C	OPEN	OPEN
NN-5555A/5505A/5535A NN-5525A/5515A/5555C	SHORT	OPEN

KEY BOARD

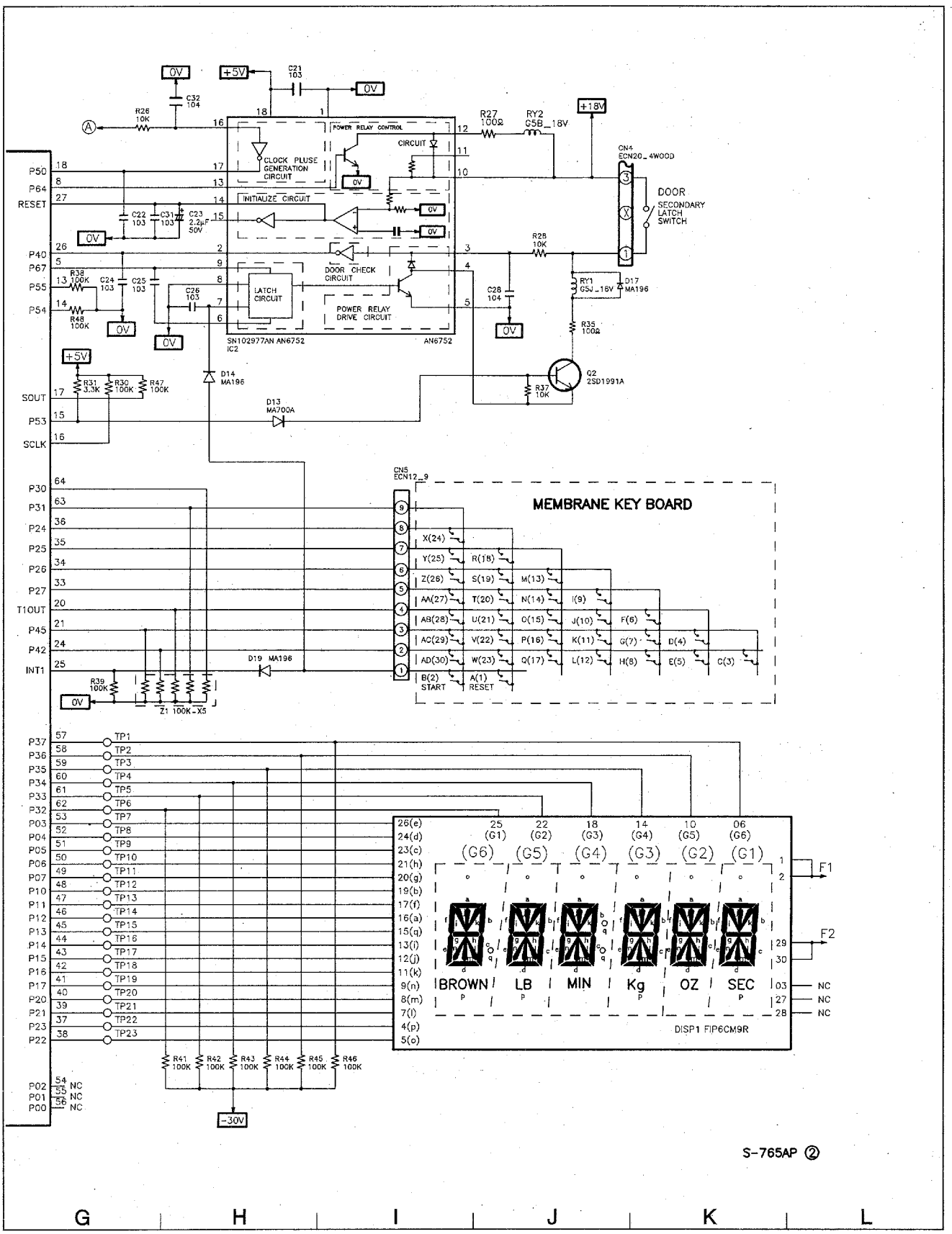
A(1)	STOP/RESET
B(2)	START
C(3)	POWER
D(4)	1LB/1kg
E(5)	1oz/0.1kg
F(6)	QUICK MIN
G(7)	AUTO REHEAT
H(8)	POTATO
I (9)	POPCORN
J(10)	BEVERAGE
K(11)	VEGETABLES
L(12)	FROZEN FOODS
M(13)	FISH FILLETS
N(14)	SHELLFISH
O(15)	RICE
P(16)	POULTRY
Q(17)	MEAT
R(18)	SERV/WEIGHT
S(19)	CLOCK
T(20)	TIMER
U(21)	0
V(22)	1
W(23)	2
X(24)	3
Y(25)	4
Z(26)	5
AA(27)	6
AB(28)	7
AC(29)	8
AD(30)	9

VOLTAGE OF IC1 TERMINALS

IC1 PIN NO.	FUNCTION	TEST CONDITION	VOLTAGE (APPROX.)
27	RESET	NORMAL	5V
26	DOOR CHECK	DOOR OPEN	5V
		DOOR CLOSED	0V
5	LATCH CIRCUIT	BEFORE SETTING	0V
		POWER SELECTED OR DURING OPERATION	5V
8	RY2/OVEN LAMP	DURING COOKING OR DOOR OPEN	5V
15	RY1/MICROWAVE	DURING MICROWAVE COOKING	5V

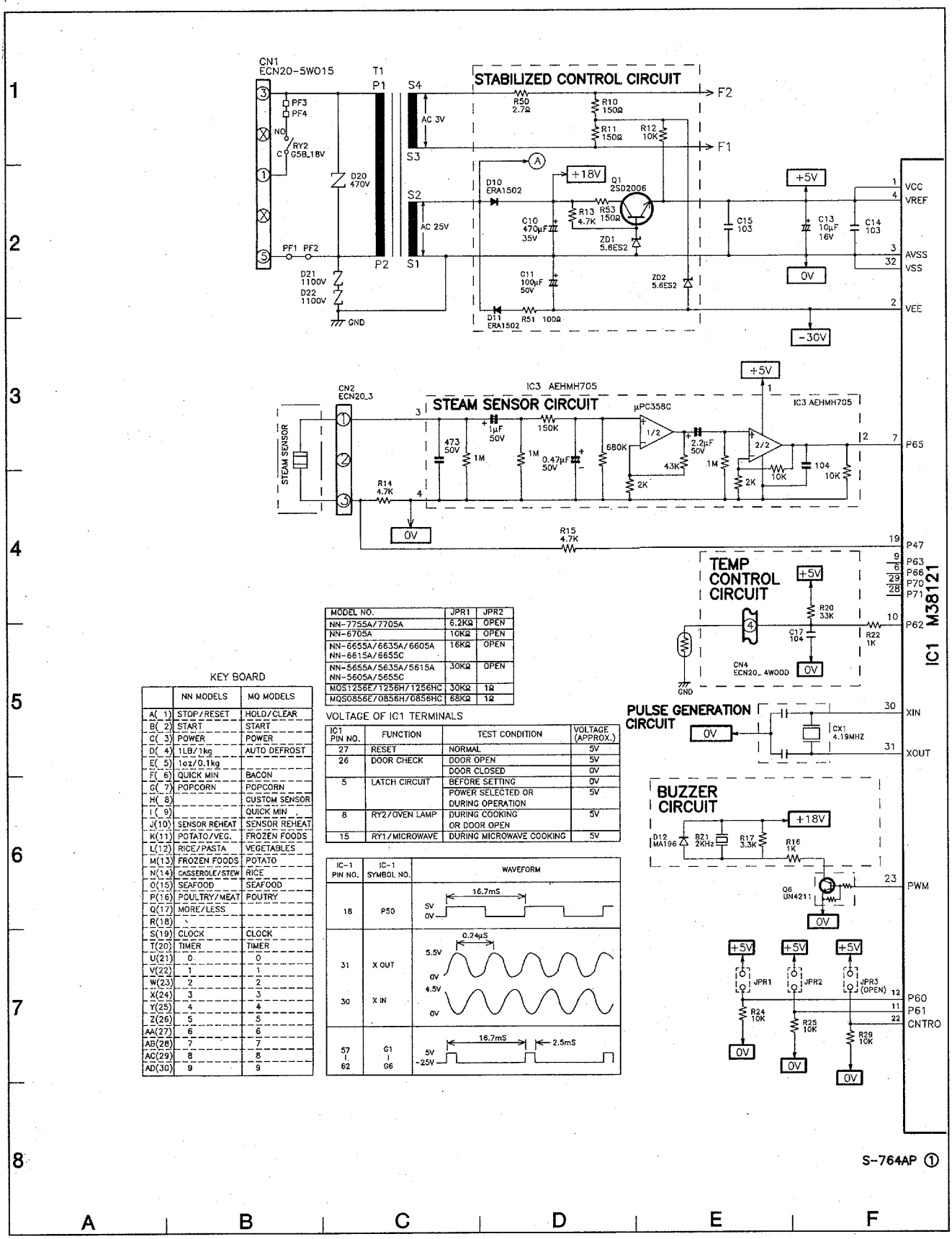
IC-1 PIN NO.	IC-1 SYMBOL NO.	WAVEFORM
18	P50	16.7mS, 5V, 0V
31	X OUT	0.24μS, 5.5V, 0V
30	X IN	4.5V, 0V
57 I 62	G1 I G6	16.7mS, 2.5mS, 5V, -25V

S-765AP ①


0V
+5V
+18V
C21 103
C32 104
R26 10K
R27 100Ω
RY2 G5B_18V
POWER RELAY CONTROL
CLOCK PLUSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
CIRCUIT
CN4 ECN20_4WOOD
DOOR SECONDARY LATCH SWITCH
R28 10K
RY1 G5J_16V
D17 MA196
C28 104
R35 100Ω
Q2 2SD1991A
R37 10K
C22 103
C31 103
C23 2.2μF 50V
C24 103
C25 103
C26 103
R38 100K
R48 100K
SN102977AN AN6752
IC2
AN6752
D14 MA196
D13 MA700A
R31 3.3K
R30 100K
R47 100K
P50
P64
RESET
P40
P67
P55
P54
SOUT
P53
SCLK
P30
P31
P24
P25
P26
P27
T1OUT
P45
P42
INT1
CN5 ECN12_9
MEMBRANE KEY BOARD
X(24)
Y(25)
Z(26)
AA(27)
AB(28)
AC(29)
AD(30)
B(2) START
A(1) RESET
R(18)
S(19)
T(20)
U(21)
V(22)
W(23)
M(13)
N(14)
O(15)
P(16)
Q(17)
I(9)
J(10)
K(11)
L(12)
F(6)
G(7)
H(8)
D(4)
E(5)
C(3)
D19 MA196
R39 100K
Z1 100K_X5
P37
P36
P35
P34
P33
P32
P03
P04
P05
P06
P07
P10
P11
P12
P13
P14
P15
P16
P17
P20
P21
P23
P22
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP19
TP20
TP21
TP22
TP23
R41 100K
R42 100K
R43 100K
R44 100K
R45 100K
R46 100K
P02 NC
P01 NC
P00 NC
-30V
(G1)
(G2)
(G3)
(G4)
(G5)
(G6)
BROWN
LB
MIN
Kg
OZ
SEC
F1
F2
NC
DISP1 FIP6CM9R
S-765AP ②

DIGITAL PROGRAMMER CIRCUIT (NN-77X5, NN-6705A, NN-66X5, NN-56X5, MQS1256, MQS0856)

SCHEMATIC DIAGRAM



KEY BOARD

	NN MODELS	MQ MODELS
A(1)	STOP/RESET	HOLD/CLEAR
B(2)	START	START
C(3)	POWER	POWER
D(4)	1LB/1kg	AUTO DEFROST
E(5)	1oz/0.1kg	
F(6)	QUICK MIN	BACON
G(7)	POPCORN	POPCORN
H(8)		CUSTOM SENSOR
I(9)		QUICK MIN
J(10)	SENSOR REHEAT	SENSOR REHEAT
K(11)	POTATO/VEG.	FROZEN FOODS
L(12)	RICE/PASTA	VEGETABLES
M(13)	FROZEN FOODS	POTATO
N(14)	CASSEROLE/STEW	RICE
O(15)	SEAFOOD	SEAFOOD
P(16)	POULTRY/MEAT	POULTRY
Q(17)	MORE/LESS	
R(18)		
S(19)	CLOCK	CLOCK
T(20)	TIMER	TIMER
U(21)	0	0
V(22)	1	1
W(23)	2	2
X(24)	3	3
Y(25)	4	4
Z(26)	5	5
AA(27)	6	6
AB(28)	7	7
AC(29)	8	8
AD(30)	9	9

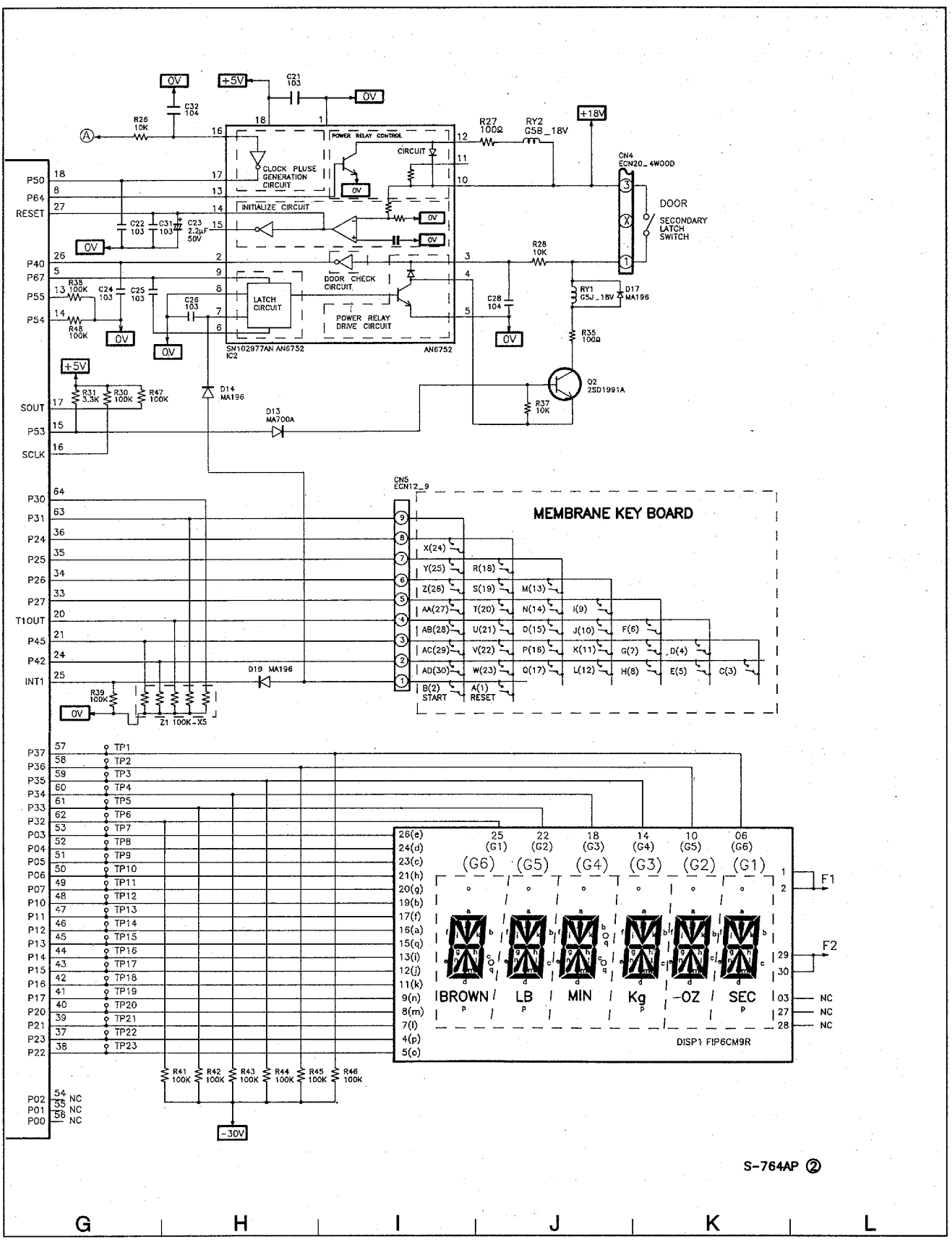
MODEL NO.	JPR1	JPR2
NN-7755A/7705A	6.2KΩ	OPEN
NN-6705A	10KΩ	OPEN
NN-6655A/6635A/6605A NN-6615A/6655C	16KΩ	OPEN
NN-5655A/5635A/5615A NN-5605A/5655C	30KΩ	OPEN
MQS1256E/71256H/71256HC	30KΩ	1Ω
MQS0856E/70856H/0856HC	68KΩ	1Ω

VOLTAGE OF IC1 TERMINALS

IC1 PIN NO.	FUNCTION	TEST CONDITION	VOLTAGE (APPROX.)
27	RESET	NORMAL	5V
26	DOOR CHECK	DOOR OPEN	5V
		DOOR CLOSED	0V
5	LATCH CIRCUIT	BEFORE SETTING	0V
		POWER SELECTED OR DURING OPERATION	5V
8	RY2/OVEN LAMP	DURING COOKING OR DOOR OPEN	5V
15	RY1/MICROWAVE	DURING MICROWAVE COOKING	5V

IC-1 PIN NO.	IC-1 SYMBOL NO.	WAVEFORM
18	P50	16.7mS, 5V, 0V
31	X OUT	0.24μS, 5.5V, 0V
30	X IN	4.5V, 0V
57 I 62	G1 I G6	16.7mS, 2.5mS, 5V, -25V

S-764AP ①


0V
+5V
+18V
C21 103
C32 104
R26 10K
POWER RELAY CONTROL
CIRCUIT
CLOCK PLUSE GENERATION CIRCUIT
INITIALIZE CIRCUIT
DOOR CHECK CIRCUIT
LATCH CIRCUIT
POWER RELAY DRIVE CIRCUIT
SN102977AN AN6752
IC2
AN6752
R27 100Ω
RY2 G5B_18V
CN4 ECN20_4W00D
DOOR
SECONDARY LATCH SWITCH
R28 10K
RY1 G5J_18V
D17 MA196
R35 100Ω
Q2 2SD1991A
R37 10K
C28 104
C22 103
C31 103
C23 2.2μF 50V
C24 103
C25 103
C26 103
R38 100K
R48 100K
R31 3.3K
R30 100K
R47 100K
D14 MA196
D13 MA700A
P50
P64
RESET
P40
P67
P55
P54
SOUT
P53
SCLK
P30
P31
P24
P25
P26
P27
T1OUT
P45
P42
INT1
CN5 ECN12_9
MEMBRANE KEY BOARD
X(24)
Y(25)
Z(26)
AA(27)
AB(28)
AC(29)
AD(30)
B(2) START
A(1) RESET
R(18)
S(19)
T(20)
U(21)
V(22)
W(23)
M(13)
N(14)
O(15)
P(16)
Q(17)
I(9)
J(10)
K(11)
L(12)
F(6)
G(7)
H(8)
D(4)
E(5)
C(3)
D19 MA196
R39 100K
Z1 100K-X5
TP1
TP2
TP3
TP4
TP5
TP6
TP7
TP8
TP9
TP10
TP11
TP12
TP13
TP14
TP15
TP16
TP17
TP18
TP19
TP20
TP21
TP22
TP23
P37
P36
P35
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P32
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P10
P11
P12
P13
P14
P15
P16
P17
P20
P21
P23
P22
P02
P01
P00
NC
R41 100K
R42 100K
R43 100K
R44 100K
R45 100K
R46 100K
-30V
(G6)
(G5)
(G4)
(G3)
(G2)
(G1)
BROWN
LB
MIN
Kg
-OZ
SEC
F1
F2
DISP1 FIP6CM9R

S-764AP ②

DIGITAL PROGRAMMER CIRCUIT

(For NN-77X5, NN-75X5,NN-67X5, NN-66X5, NN-65X5, NN-56X5, NN-55X5 Models)

PARTS LIST NOTE: Items marked * are supplied by MMCA. (U.S.A.)

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
BZ1	AEFB22EP2002	BUZZER	1	2.0KHZ
C10	ECA1VM471B	ELECTROLYTIC CAPACITOR,AL	1	470μF/35V/20%
C11	ECA1HM101B	ELECTROLYTIC CAPACITOR,AL	1	100μF/50V/20%
C13	ECEA1CKA100B	ELECTROLYTIC CAPACITOR,AL	1	10μF/16V/20%
C14,15,21, 22,24,25, 26,31	ECBT1E103ZF5	CERAMIC CAPACITOR	8	0.01μF/25V/ 20%+80%
C17,28,32	AECF50F104Z	CERAMIC CAPACITOR	3	0.1μF/50V/ −20%+80%
C23	ECEA1HKA2R2B	ELECTROLYTIC CAPACITOR,AL	1	2.2μF/50V/20%
CN1	AEEMMF01505W	CONNECTOR	1	5PIN
CN2	AEEMMF00703W	CONNECTOR	1	3PIN
CN4	AEEMMF00D04W	CONNECTOR	1	4PIN
CN5	AEEM09FDZBTM	CONNECTOR	1	
CX1	EF0GC4194T4	CERAMIC RESONATOR	1	4.19MHZ
D10,11	AEDNERA1502	DIODE,SI	2	(1A)
D12,14,17,19	MA196-(TA5)	DIODE,SI	4	(0.1A)
D13	MA700A-(TA)	DIODE,SI	1	(0.03A)
DISP1*	AEFR6CM9R	FLUORESCENT TUBE	1	
IC1*	AEIC38121058	L.S.I	1	
IC2	AN6752	IC	1	
IC3	AEHMH705	IC	1	NN-77X5 NN-6705A NN-66X5 NN-56X5
Q1	2SD2006QRTA	TRANSISTOR,SI,1.2W	1	(120MHZ)
Q2	2SD1991AQSTA	TRANSISTOR,SI,400MW	1	(150MHZ)
Q6	UN4211	TRANSISTOR, SI, 300mW	1	
R10,11,53	ERDS2TJ151T	CARBON FILM RESISTOR	3	150Ω,1/4W ±5%
R12,24,25, 26,28,29,37	ERDS2TJ103T	CARBON FILM RESISTOR	7	10KΩ,1/4W ±5%
R13	ERDS2TJ472T	CARBON FILM RESISTOR	1	NN-75X5 NN-66X5 NN-55X5 4.7KΩ,1/4W,±5%
R13,14,15	ERDS2TJ472T	CARBON FILM RESISTOR	3	NN-77X5 NN-6705A NN-66X5 NN-56X5 4.7KΩ,1/4W,±5%
R16,22	ERDS2TJ102T	CARBON FILM RESISTOR	2	1KΩ,1/4W ±5%
R17,31	ERDS2TJ332T	CARBON FILM RESISTOR	2	3.3KΩ,1/4W ±5%
R20	ERDS2TJ333T	CARBON FILM RESISTOR	1	33KΩ,1/4W ±5%
R27,35,51	ERDS2TJ101T	CARBON FILM RESISTOR	3	100Ω,1/4W ±5%
R30,38,39, 40,41,42,43, 44,45,46,47, 48	ERDS2TJ104T	CARBON FILM RESISTOR	11	100KΩ,1/4W ±5%
R50	ERD25VJ2R7T	CARBON FILM RESISTOR	1	2.7Ω,1/4W,±5%
RY1	⚠AEG5J1EG18B	POWER RELAY	1	(18V)
RY2	⚠AEBG5B18P-1	POWER RELAY	1	(18V)
SPACER*	B82847010AP	SPACER	1	FOR DISP
T1	A62494010AP	L.V.TRANSFORMER	1	ETP35K136A
Z1	AEXBM4X104JT	COMPOUND-RESISTOR	1	100KΩX4
ZD1,2	AEDZ5R6ES3T1	ZENER DIODE,SI	2	
D20	ERZC10DK471F	VARISTOR	1	
D21,22	ERZC10DK112A	VARISTOR	2	

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
JPR1	ERD25VJ683T	CARBON FILM RESISTOR	1	NN-75X5 68KΩ,1/4W,±5%
JPR1	ERD25VJ303T	CARBON FILM RESISTOR	1	NN-56X5 30kΩ,1/4W,±5%
JPR1	ERD25VJ622T	CARBON FILM RESISTOR	1	NN-76X5 6.2kΩ,1/4W,±5%
JPR1	ERD25VJ103T	CARBON FILM RESISTOR	1	NN-6705A 10kΩ,1/4W,±5%
JPR1	ERD25VJ163T	CARBON FILM RESISTOR	1	NN-66X5 16kΩ,1/4W,±5%

SERVICE FIXTURES AND TOOLS

EXTENSION CABLES

NOTE: To be used when repairing the DPC board assembly directly on the oven for easy access of the board.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	AT40P003	3 pin Extension Cable	1	Cable No. 48
	AT40P004	4 pin Extension Cable	1	Cable No. 47
	AT40P005	5 pin Extension Cable	1	Cable No. 46
	AT40E006	1 pinX8 Extension Cable	1	Cable No. 9

DPC COMMON CHECKER AND ITS CABLE

NOTE: To be used only when DPC common checker is available.

Ref. No.	Part No.	Description	Pcs/ Set	Remarks
	ANE600ZK70AP	DPC. Common Checker	1	
	AT30A7020AP	DPC. Checker Cable	1	NOTE

(S-765 APH)